SMALL CAR SAFETY TECHNOLOGY

HEARINGS

BEFORE THE

SUBCOMMITTEE ON TRANSPORTATION,
AVIATION AND MATERIALS

AND THE

SUBCOMMITTEE ON
INVESTIGATIONS AND OVERSIGHT

OF THE

COMMITTEE ON
SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

NINETY-SEVENTH CONGRESS

SECOND SESSION

NOVEMBER 30; DECEMBER 3, 1982

[No. 164]

Printed for the use of the
Committee on Science and Technology

U.S. GOVERNMENT PRINTING OFFICE
16-369 O WASHINGTON : 1983

H 701 — 43

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CONTENTS

WITNESSES

Page
November 30, 1982:
  J. Dexter Peach, Director, Resource, Community and Economic Development Division, U.S. General Accounting Office; accompanied by J. Kevin Donahue, Group Director, Resources, Community and Economic Development Division, U.S. General Accounting Office; and Cathy Slesinger, Evaluator, Resources, Community and Economic Development Division, U.S. General Accounting Office 3
  William Haddon, M.D., president, Insurance Institute for Highway Safety 30
  Joan Claybrook, president, Public Citizen 177
  David Martin, director, automotive safety engineering, General Motors Corp 220
  Donald Friedman, president, MCR Technology, Inc 277
  Michael M. Finkelstein, Associate Administrator, National Highway Traffic Safety Administration 283
December 3, 1982:
  A. Raymond Peck, Jr., Administrator, National Highway Traffic Safety Administration; accompanied by Michael Finkelstein, Associate Administrator, Research and Development; Courtney M. Price, Associate Administrator for Rulemaking; Richard Burdette, Director of Public and Consumer Affairs; and Frank Berndt, Esq., Chief Counsel 307
Appendix: Additional material submitted for the record from Volkswagen of America, Inc 501

SMALL CAR SAFETY TECHNOLOGY

TUESDAY, NOVEMBER 30, 1982

HOUSE OF REPRESENTATIVES, COMMITTEE ON SCIENCE AND TECHNOLOGY, SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS, AND SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT,

Washington, D.C.

The subcommittees met, pursuant to call, at 9:30 a.m., in room 2322, Rayburn House Office Building, Hon. Dan Glickman (chairman of the Subcommittee on Transportation, Aviation and Materials) presiding.

Mr. **GLICKMAN**. The subcommittees will come to order.

Good morning. First of all, under the committee rules I have to ask if there is any objection to the use of television today. I assume there is not, so we will proceed.

Mr. Albert Gore and I are pleased to join together today with our two subcommittees of the Science and Technology Committee for an investigative hearing on small car safety technology.

Approximately 50,000 Americans are killed in traffic accidents every year. To put that number in perspective, it is roughly equivalent to a major airline accident every day of the year. In fact, nearly as many Americans are killed annually in automobile accidents as were killed in combat during the Vietnam war.

With the increased number of small cars on the highways, the number of fatalities is likely to increase dramatically. Statistics indicate that more fatalities occur in smaller cars than larger cars. The insurance industry reports that the fatality rate is more than twice as high for occupants of smaller cars than it is for larger cars. A 1981 report of the National Highway Traffic Safety Administration predicts that annual fatalities will increase by 10,000 per year by 1990 solely due to the increased number of small cars in operation.

Yet, as we are faced with these alarming trends, the Government seems to be systematically dismantling a number of automobile safety programs. The research safety vehicle has been phased out, even though the most modern of these vehicles can protect an occupant for injury at impact speeds of 50 miles per hour. A number of other programs are also being phased out or put on hold.

It is interesting to contrast the Government's involvement in aviation safety and automotive safety. The Government spends millions of dollars on aviation safety technology and everyone is shocked and alarmed when a single airline crash occurs. Yet 50,000 people die each year in automotive accidents while the Government responds by sponsoring a seat belt advertising campaign and largely ignoring existing technological solutions.

The Science and Technology Committee is particularly interested in seeing that new technology is used for the benefit of public safety. Clearly, Congress should now take a closer look at small car safety issues and push for the use of new technology, where appropriate, to minimize small car safety hazards. We have a number of automotive safety experts here today, and I look forward to a very enlightening and productive hearing.

I would call on my cochairman, Mr. Albert Gore.

Mr. **Gore**. Thank you very much.

For a variety of reasons, most people would agree that small cars are here to stay. Their prevalence is giving rise to a problem that the U.S. Government has to face. Data from the insurance industry and from various State transportation agencies tell us that these smaller vehicles are simply not as safe as larger cars. Although there is mixed evidence about whether or not small cars are more likely to be involved in accidents, there is no dispute whatever that passengers in smaller cars tend to be more severely injured in accidents when they do occur.

There is only one clear and practical solution to such a problem, and that is to make the cars safer through technological advances. But because this appears to be such a simple answer, some recent reports on the performance of the National Highway and Traffic Safety Administration, the agency responsible for small car safety, are troubling, to say the least.

Last April, the General Accounting Office, who will begin today's hearing, found that NHTSA does not gather sufficient data on small car accidents and has failed to give small car safety the priority that it deserves in the agency's research effort. Just last September, a report by the consumer group Public Citizen roundly criticized the performance of NHTSA and accused the agency, among other things, of dismantling important safety research programs, limiting the amount of information made available to the public, not fulfilling obligations required by law, and relying solely on the automakers to make small as well as large cars safe.

These subcommittees are concerned that the Department of Transportation is not managing its safety research wisely, is not making every effort to transfer available technology to the public domain, and thereby may be remiss in fulfilling its statutory obligations to make our highways safe.

We look forward to today's proceedings, and we would like to thank all of the witnesses for taking the time and effort to appear here today.

Mr. **Glickman**. Mr. Walker.

Mr. **Walker**. Thank you, Mr. Chairman.

Mr. Chairman, I would like to take this opportunity to also welcome the witnesses here today and to say that I think that this will be both an interesting hearing and one which will be of importance to all Americans.

There can be no doubt that Americans are rapidly moving from large cars to smaller automobiles. We observe this every day on our highways. There can also be no doubt that, based upon the laws of physics, the smaller car will not fare as well in an accident as with a larger vehicle just based upon relative mass alone.

The carnage on our highways is already at record levels. Each year, more Americans die on the highways than died in Vietnam. It is becoming apparent that unless we do something fairly quickly to assure better safety in our small cars, the death toll will continue to increase.

Our hearing today will attempt to focus on the problems of smaller cars to determine what can and what cannot be reasonably expected from Government in research efforts to make our highways safer for the average citizen.

Thank you, Mr. Chairman.

Mr. **Glickman**. Thank you.

As Mr. Gore mentioned, our first witness is Mr. J. Dexter Peach, Director of the Resource, Community and Economic Development, U.S. General Accounting Office. It is a pleasure to have you here.

Your statement is not very long. I would tell all the witnesses that you may feel free to summarize your statements, as they will be put into the record in their entirety, depending upon your pleasure. Sometimes that lengthens the process. You use your own discretion.

STATEMENT OF J. DEXTER PEACH, DIRECTOR, ACCOMPANIED BY J. KEVIN DONOHUE, GROUP DIRECTOR; AND CATHY SLESINGER, EVALUATOR, RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE

Mr. **Peach**. Thank you, Mr. Chairman, for allowing me that discretion. I probably will stick, for the most part, to my prepared statement since it is brief and summarizes in succinct terms, I hope, what was a much lengthier report on this subject.

We appreciate the opportunity to be here today to discuss our report which was entitled "Small Car Safety: An Issue That Needs Further Evaluation."

The Nation's passenger car fleet has witnessed a slow, steady increase of smaller, lighter cars during the last decade, replacing the 4,000-pound and heavier cars of the 1960's and early 1970's. In 1979, cars weighing less than 3,500 pounds represented only 37 percent of the passenger cars in operation, but by 1990 they are estimated to represent 64 percent of the passenger car fleet.

As a consequence, the safety picture for the occupants of smaller cars becomes a significant concern. Will the physical characteristics of smaller size, lesser weight, and shorter length adequately protect the occupant in an accident? Or will passenger car fatalities and injuries sharply escalate because of the growing small car population?

Chairman Glickman in his opening statement referred to the fatality experience of smaller car occupants. For example, a January 1982 report by the Insurance Institute for Highway Safety stated that the rate of deaths for the number of small subcompact cars on the road was more than twice that of full-size cars. Government statistics indicate that a disproportionate number of passenger fatalities occur in smaller cars. The National Highway Traffic Safety

Administration estimated a continuing shift in the size and weight of vehicles on the road could result in an additional 10,000 traffic deaths per year by 1990.

Major issues concerning smaller cars have not been resolved. These issues concern whether smaller cars are in more accidents, whether they protect their occupants in different accident situations, and whether the roads are adequate to safely contain the smaller car. These questions are not new, but vehicle and highway safety experts and auto industry officials have not been able to agree on the answers.

These concerns and the continuing disagreement about small car safety prompted our review of the issue. Our objective was a basically simple one, of assessing smaller car safety in light of available information and what was being done by the Federal Government. In conducting the review, we also examined the relative safety of larger cars to gain a full understanding of occupant safety based on vehicle size. Let me summarize briefly the report's findings, conclusions, and recommendations.

To gain a better understanding of the smaller car safety question, we reviewed over 200 research and study documents and conducted extensive interviews with representatives from government, industry, and academia. We also collected and analyzed accident and injury data from the States of New York and Michigan, as well as the Safety Administration, to independently determine the type of data available and whether its analysis could reveal more about the smaller car safety performance. We realized that these analyses might not always represent nationwide statistics.

Our analysis and many of the studies we reviewed showed that smaller cars were not overrepresented in total vehicle accidents when compared with the number of smaller vehicles registered in those States. However, smaller cars were generally overrepresented in single-vehicle accidents with guardrails and median barriers.

On the question of occupant injury, we did find one undisputed fact: occupants of smaller cars received more injuries in collisions with larger cars than did larger car occupants. Our analysis showed that the incidence of severe and fatal injuries was two to four times greater to smaller car occupants than the larger car occupants. However, the results did not show a consistent trend of greater injury for smaller car occupants in collisions of cars of similar size nor in single-vehicle accidents. Also, our analysis of the data can raise questions about injury experience in various forms of single-vehicle accidents.

Our study of the adequacy of roadways for smaller cars revealed disagreement among vehicle and highway safety experts. Much of the recent highway safety literature suggests that roadways are unsafe for small cars, since roadways, roadside hardware, and roadway signs and markings were designed for heavier, larger cars. Though roadway design guidelines have changed to keep pace with changes in fleet composition, many experts state that the recent surge of smaller car sales may have outpaced present guidelines.

Most analyses of the adequacy of roadways have been based on the crash testing of smaller cars against roadside hardware. These tests have demonstrated that the lighter 1,800-pound car does not perform adequately against some roadside hardware. For example, crash tests have shown that smaller cars can snag the support posts of guardrails, be speared when hitting the rail, or roll over after hitting the rail.

Few of the studies we reviewed included examination of accident data on particular types of single-vehicle accidents. Based on our analysis of guardrail, median barrier and pole accidents, we could not conclude that smaller cars occupants experienced greater injury than larger car occupants. However, as I noted earlier, smaller cars are overrepresented in the number of guardrail and median barrier accidents.

Our analysis and other studies of rollover accidents demonstrated that smaller, lighter cars do have a greater likelihood to overturn. Many experts believe smaller cars are less stable with smaller tires and narrower body width and are therefore more likely to roll over.

Other small car safety issues such as lower eye height, lower ground clearance and acceleration capability are much harder to assess through any form of analysis, including accident data. We found little information which addressed these issues.

All of the foregoing brings us to the question of the adequacy and availability of accident data. Much has been said about the inadequacy of the data and its use in analyzing small car safety issues. Critics suggest that many discrepancies can occur in the collection and presentation of the data and that some safety issues may not be able to be studied with this type of data.

Additionally, simple accident data analysis which doesn't take into consideration age of driver, age of car, seat belt usage, vehicle miles traveled—to mention a few—may not provide the best and truest reading of the data. The Office of Technology Assessment in a September 1982 report noted the need to consider variables that might affect the interpretation of the accident data analysis. They cited that much of the current concern about the safety of small cars is based on statistical analysis of national data from the Safety Administration which oftentimes is used without considering factors other than car size.

OTA cited some other difficulties with existing analyses, difficulties which we also had in our attempt to draw conclusions about small car safety from available research. Analysts use different data bases, such as those available from the States and the Safety Administration; different measures of vehicle size, such as wheelbase, interior size and weight; different measures of safety, such as deaths per 100,000 registered vehicles, deaths per vehicle mile driven, deaths per crash; and different timeframes.

Though our analysis found few answers to the small car safety issues, it did demonstrate sufficient evidence to warrant both concern and further evaluation.

The Department of Transportation's Safety Administration and Federal Highway Administration include smaller cars in research and testing. However, neither agency has determined the highway safety experience of smaller cars. The Department's research does not provide enough information on specific types of accidents, such as collisions with roadside barriers. Much of it is not current and may not represent the present-day safety concerns with smaller cars. Many vehicle and highway safety experts have stated that more and better statistical use of accident data could provide this information. But the Department's research is conducted with only limited use of this data.

The Federal Government, States, and private groups have performed many studies and tests on smaller cars. Much of this information is engineering analysis which uses automotive crash tests under controlled or laboratory conditions to understand the physical structure of the vehicle and roadway. This information could be tapped to help define and appraise safety of smaller cars.

However, a fuller examination of accident data needs to be conducted. Without concentrated efforts to better use accident data to study the impact of vehicular size on occupant safety, the actual experience of our Nation's driving public cannot be adequately analyzed. At the time of our review, many Safety Administration and Federal Highway Administration officials agreed that further study of smaller cars with accident data would be useful in clarifying perceived safety problems.

We recommended that the Secretary of Transportation determine which smaller car safety issues need the Nation's greatest attention and adopt countermeasures to reduce accidents and injuries involving smaller cars. To begin to accomplish this task, we recommended the Secretary examine all relevant sources of available accident and test information, but that emphasis be given to using accident data.

Accident data can be retrieved from many sources. The Safety Administration has at least two data systems which are useful for this purpose—the Fatal Accident Reporting System and the National Accident Sampling System. Many States have data not included in the Federal systems, and private organizations such as the Highway Safety Research Institute and the Highway Safety Research Center have their own data to study smaller car safety. Presently, all have certain limitations, which is why we recommended the Secretary examine a number of alternative methods of determining the most effective and plausible approach to evaluate smaller car safety.

We also recommend that the Secretary use the results of such an analysis to rank research priorities in deciding on future programs which can affect the safety of smaller cars on the highway.

Mr. Chairman, that concludes my statement. I and my colleagues will be glad to answer any questions.

I have with me today at the table on my right Mr. Kevin Donohue, who is in charge of the work that we do on highway safety issues at the Department of Transportation; and Ms. Cathy Slesinger, who was involved with the particular study that we did on the safety of small cars.

[The prepared statement of Mr. Peach follows:]

FOR RELEASE ON DELIVERY
Expected at 9:30 a.m.
Tuesday, November 30, 1982

UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

STATEMENT OF

J. DEXTER PEACH, DIVISION DIRECTOR

RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION

BEFORE THE

HOUSE SUBCOMMITTEE ON TRANSPORTATION,

AVIATION, AND MATERIALS

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ON

SMALL CAR SAFETY

Chairmen and Members of the Subcommittees:

We appreciate the opportunity to be here today to discuss our report entitled "Small Car Safety: An Issue That Needs Further Evaluation" (CED-82-29, Apr. 26, 1982).

The Nation's passenger car fleet has witnessed a slow, steady increase of smaller, lighter cars during the last decade, replacing the 4,000-pound and heavier cars of the 1960's and early 70's. In 1979 cars weighing less than 3,500 pounds represented only

37 percent of the passenger cars in operation, but by 1990 they are estimated to represent 64 percent of the passenger car fleet.

As a consequence, the safety picture for the occupants of smaller cars becomes a significant concern. Will the physical characteristics of smaller size, lesser weight, and shorter length adequately protect the occupant in an accident? Or will passenger car fatalities and injuries sharply escalate because of the growing small car population?

Fatality experience of smaller car occupants is grim. A January 1982 report by the Insurance Institute for Highway Safety stated that the rate of deaths for the number of small subcompact cars on the road was more than twice that of full size cars. Government statistics indicate that a disproportionate number of passenger fatalities occur in smaller cars. The National Highway Traffic Safety Administration estimated that a continuing shift in the size and weight of vehicles on the road could result in an additional 10,000 traffic deaths per year by 1990.

Major issues concerning smaller cars have not been resolved. These issues concern whether smaller cars are in more accidents, whether they protect their occupants in different accident situations, and whether roads are adequate to safely contain the smaller car. These questions are not new, but vehicle and highway safety experts and auto industry officials have not been able to agree on the answers.

These concerns and the continuing disagreement about small car safety prompted our review of the issue. Our objective was to assess smaller car safety in light of available information and what was being done by the Federal Government. In conducting the review, we also examined the relative safety of larger cars to gain a full understanding of occupant safety, based on vehicle size. Let me summarize the report's findings, conclusions, and recommendations.

Is the small car a safety problem?

To gain a better understanding of the smaller car safety question, we reviewed over 200 research and study documents and conducted extensive interviews with representatives from government, industry, and academia. We also collected and analyzed accident and injury data from the States of New York and Michigan as well as the Safety Administration to independently determine the type of data available and whether its analysis could reveal more about the smaller car safety performance. We realized that these analyses might not always represent nationwide statistics.

Our analysis and many of the studies we reviewed showed that smaller cars were not overrepresented in total vehicle accidents when compared with the number of smaller vehicles registered in those States. However, smaller cars were generally overrepresented in single-vehicle accidents with guardrails and median barriers.

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Other small car safety issues such as lower eye height, lower ground clearance, and acceleration capability are much harder to assess through any form of analysis, including accident data. We found little information which addressed these issues.

All of the foregoing brings us to the question of the adequacy and availability of accident data. Much has been said about the inadequacy of the data and its use in analyzing small car safety issues. Critics suggest that many discrepancies can occur in the collection and presentation of the data and that some safety issues may not be able to be studied with this type of data.

Additionally, simple accident data analysis which doesn't take into consideration age of driver, age of car, seat belt usage, vehicle miles traveled--to mention a few--may not provide the best and truest reading of the data. The Office of Technology Assessment (OTA) in a September 1982 report noted the need to consider variables that might affect the interpretation of the accident data analysis. They cited that much of the current concern about the safety of small cars is based on statistical analysis of national data from the Safety Administration which oftentimes is used without considering factors other than car size.

OTA cited some other difficulties with existing analyses--difficulties which we also had in our attempt to draw conclusions about small car safety from available research. Analysts use

- -different data bases such as those available from the States and the Safety Administration;
- --different measures of vehicle size such as wheelbase, interior size, and weight;
- --different measures of safety such as deaths per 100,000 registered vehicles, deaths per vehicle mile driven, deaths per crash; and
- --different time frames.

Though our analysis found few answers to the small car safety issues, it did demonstrate sufficient evidence to warrant both concern and further evaluation.

Information is available to determine safety problems of smaller cars

The Department of Transportation's Safety Administration and Federal Highway Administration include smaller cars in research and testing; however, neither agency has determined the highway safety experience of smaller cars. The Department's research does not provide enough information on specific types of accidents, such as collisions with roadside barriers. Much of it is not current and may not represent the present day safety concerns with smaller cars. Many vehicle and highway safety experts have stated that more and better statistical use of accident data could provide this information. But, the Department's research is conducted with only limited use of this data.

The Federal Government, States, and private groups have performed many studies and tests on smaller cars. Much of this information is engineering analysis which uses automotive crash tests under controlled or laboratory conditions to understand the physical structure of the vehicle and roadway. This information could be tapped to help define and appraise safety of smaller cars.

However, a fuller examination of accident data needs to be conducted. Without concentrated efforts to better use accident data to study the impact of vehicular size on occupant safety, the actual experience of our Nation's driving public cannot be adequately analyzed. At the time of our review, many Safety Administration and Federal Highway Administration officials agreed that further study of smaller cars with accident data would be useful in clarifying perceived safety problems.

GAO recommended that the Secretary of Transportation determine which smaller car safety issues need the Nation's greatest attention and adopt countermeasures to reduce accidents and injuries involving smaller cars. To begin to accomplish this task, we recommended that the Secretary examine all relevant sources of available accident and test information but that emphasis be given to using accident data.

Accident data can be retrieved from many sources. The Safety Administration has at least two data systems which are useful for this purpose--the Fatal Accident Reporting System and the National Accident Sampling System. Many States have data not included in the Federal systems, and private organizations such as the Highway Safety Research Institute and the Highway Safety Research Center have their own data to study smaller car safety. Presently, all have certain limitations which is why we recommended that the Secretary examine a number of alternative methods of determining the most effective and plausible approach to evaluate smaller car safety.

We also recommended that the Secretary use the results of such an analysis to rank research priorities in deciding on future programs which can affect the safety of smaller cars on the highway.

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Chairmen, this concludes my statement. We will be glad to respond to your questions.

Mr. **Glickman**. Thank you, Mr. Peach, for your fine statement. Mr. Gore.

Mr. **Gore**. Thank you very much, Mr. Chairman.

Mr. Peach, I want to begin by doing something that I always do when you appear before one of my subcommittees, and that is to say for the record what a wonderful job I think your division over at GAO does. I mean that. I know you may get tired of hearing it—maybe you don't.

Mr. **Peach**. No, sir, we don't.

Mr. **Gore**. Well, I really do mean it. I think this is another example of the fine work that you and your shop do over there.

You have essentially told us three things. No. 1—and I want you to correct me if my summary distorts what you have said—that NHTSA's basic source of accident data is inadequate, and that it has evidently an inability to separate data on small car accidents from accidents involving other kinds of vehicles; No. 2, that NHTSA has failed to adequately review and synthesize the existing data that is separable as to small cars; and No. 3, that NHTSA's research management does not recognize small car safety as a priority and has not blended it into their research agency. Is that a fair summary or does that distort what you are saying?

Mr. **Peach**. I think it is a fair summary. I might add a couple of statements, because I think the points that we had to make in our report are fairly simple points.

First, it starts from a premise that there are more smaller cars on the highway now and there are going to be many more in the future making up the majority of the vehicle fleet. It also starts from a premise that there is much we don't understand about the relative safety of smaller cars and, as they are going to make up more of a portion of the fleet, the more we need to understand. There is concern about projections that have been made about increased deaths that may occur as a result of smaller cars. So the premise is that we need to at least have a focused effort that looks at the smaller car issue and potential safety questions that can be raised there.

The place you have to start is with the fundamental accident data that exists, as you can get it from the States, and such data as is now collected by the Safety Administration, then make a very careful analysis of that data trying to look at what are the real world problems, the kinds of accidents that are occurring, the kinds of injuries that are occurring in these accidents, and then try to use that in deciding what your priorities should be in your research program.

Mr. **Gore**. Leaving aside the research aspect of it for the moment and focusing in on the information, it is not really an argument between one group of people who say the Government ought to do this and another group of people who say the industry ought to do this. The people who believe the industry ought to do it and we ought to let the market system work as it is fully capable of doing, also have got to agree that people need this information on which to base intelligent choices about which car to buy.

I drive a little Omni Horizon, a Plymouth. It is a great car and I like it fine. But my wife is concerned about the safety. She reads these figures just like everybody else. I know that when I get ready to buy a new small car, one of the main things on my mind—and I don't think I am any different from any other small car buyer—one of the main things on my mind, even more so with the next purchase than with the last one, is how safe is it, how likely is it to perform well should an accident occur. If we don't have that information available, then the forces of the marketplace are not going to allow potential purchasers to make a choice that pushes the industry to work in a way that promotes safety and avoids this tremendous tragedy which could be in part preventable.

What was the agency's response to your report when it came out?

Mr. **Peach**. We go through processes in getting agency comments. One, we usually will submit a report to the agency for comment in draft form and publish their comments in back of the report. Those comments are included in the report that we issue. We didn't find very much favorable or promising in those agency comments in terms of interest about looking specifically at the smaller car safety problems.

Now, as we look further along, the agency also will provide a 60-day response, as required by the Legislative Reorganization Act, 60 days after we have issued our final report. As we analyze those comments, we do find some things there that are a little more promising with respect to actions that they indicate they are taking.

For example, they indicate that they are going to look at the issue of trying to establish a standard measurement unit with respect to what is small. That is a problem, because different people use different criteria for deciding how they will define a small car and, consequently, it makes the analysis of such data that exists much more difficult.

They are going to be reviewing some of their current efforts in analyzing car safety emphasizing the greater use of accident data. It is not clear exactly what they are going to do, though, with the accident data, how they are going to be using it. They set up a small car working group trying to bring together various people who have interest in looking at the safety of smaller cars and trying to define better the issue about where they go from here with their research program and priorities.

All of this indicates some action, but it still is not fully responsive to what our fundamental recommendation is, and that is really making sort of a baseline study based on the accident data that is available in the States, taking a look at that accident data to find out what kinds of accidents small cars are involved in, what injuries and fatalities are occurring from these accidents, and trying to see what can be learned about how to establish research priorities from that accident data.

Mr. **Gore**. So, initially, they had an extremely negative reaction to your report and its suggestions, but after they cooled down a little bit, they decided to take a very few halting steps toward improvements along the lines you recommend.

Mr. **Peach**. That is correct. I would have to say to some degree in placing a more positive tone and would have to read between the lines a little bit to see where there may be some basis for agreement. But certainly the initial reaction was not favorable, but there is indication of some movement in the later comments.

Mr. **Gore**. I have taken my full 5 minutes.

Thank you very much.

Mr. **Glickman**. I may just follow up on that, Mr. Peach. In your report on page IV, it said:

> In commenting on the report, the Department of Transportation did not concur with the majority of GAO's findings and conclusions. It said that GAO had not added to the general level of knowledge in the area and had produced a misleading research product. It also claimed that the report provided simplistic and unsupported recommendations for the Department's management of highway safety research.

I am trying to read through the lines there. In reading through those lines, it looks like they did not provide much of a cooperative response.

Mr. **Peach**. The response in the draft report was very negative. I might say that I think they also misread our report in that regard. We were not out to produce a research document, but we were out looking at the status of research as it existed and how that research was impacting on the Department's program. So that was really the kind of analysis that we were trying to provide, and not new and original research, in that sense. It was more an oversight of the data and how it relates to the Department's program.

As I said, there is another response which we can provide for the record, which is a copy of their 60-day response after the final report was issued and which does indicate some movement in some areas by looking at some of the actions they indicate——

Mr. **Glickman**. I think that probably ought to be part of the record, as should your actual report be a part of the record as well.

[The information follows:]

JUL 29

The Honorable David A. Stockman
Director
Office of Management and Budget
Washington, D.C. 20503

Dear Mr. Stockman:

We have enclosed two copies of the Department of Transportation's (DOT) reply to the General Accounting Office (GAO) final report, "Small Car Safety: An Issue That Needs Further Evaluation," CED-82-29 dated April 26, 1982. This is in accordance with Office of Management and Budget Circular A-50.

The National Highway Traffic Safety Administration and the Federal Highway Administration already have a number of activities underway that address the small car performance discussed in the GAO report. As a result of the GAO study, we will review our current efforts to analyze the small car safety issues with emphasis on greater use of accident data to identify problems needing program changes or new research efforts. To the extent these analyses provide additional insight to the small car safety problem, the findings will be incorporated into our ongoing research program.

We have sent copies of this reply to the House Committee on Government Operations, the Senate Committee on Governmental Affairs, and the House and Senate Committees on Appropriations.

We will gladly furnish additional information upon request.

Sincerely,

(signed)
Karen S. Lee

Robert L. Fairman

Enclosures

JDawkins:sss:X60580:7/23/82
cc: M-1/20/202/23
C-1, I-1, P-1, B-1, J-1
NHTSA, GAO✓

DEPARTMENT OF TRANSPORTATION
STATEMENT ON GAO REPORT

I. TITLE: Small Car Safety: An Issue That Needs Further Evaluation, CED-82-29, dated April 26, 1982.

II. SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS: GAO's report states that the rising number of smaller cars and their ability to adequately protect their occupants are continuing concerns of vehicle and highway safety experts. The physics of smaller cars prevent them from offering as much passenger protection in every situation as larger cars. However, safety problems cannot adequately be defined or corrected until the smaller cars' performance on today's roads is determined. GAO reports that the Department of Transportation has done some studies, but it has never made a complete analysis using accident data.

GAO recommends that:

1. "--the Secretary of Transportation determine which smaller car safety issues need the Nation's greatest attention and which countermeasures can be used to reduce accidents, injuries, and fatalities involving smaller cars. To accomplish this task, we recommend that the Secretary examine all relevant sources of available accident and test information but that emphasis be given to using accident data. We recommend that for this purpose, the Secretary (1) establish standard units of measure to define all sizes of passenger cars and (2) include an examination of the contributing effects of both the driver and roadway on smaller car performance."

2. "--To determine which smaller car safety issues are most important,... the Secretary use one or more of the following techniques.

   --Organize a task force composed of FHWA and NHTSA personnel; advisors from Federal agencies, States, and industry; and vehicle and highway safety experts.

   --Develop a special studies program on smaller cars to be carried out with NASS teams and to be reviewed by both NHTSA and FHWA.

   --Develop a program to use accident data from several selected States on a continuing basis to supplement test data which is available."

3. "--the Secretary use the results of this examination to rank research priorities. No new long-term research directed at smaller cars should be started until these priorities are determined. Any new plans for short-term research involving smaller cars should be reviewed to ensure that they will be consistent with the type of examination described above. Ranking research priorities by expected benefits and costs will assist the Department in charting future courses of action and also assist the Congress with its oversight responsibilities in the vehicle safety area."

III. SUMMARY OF DEPARTMENT OF TRANSPORTATION POSITION: The subject report represents GAO's final version of a draft report provided for Agency review on December 23, 1981. The Department provided substantive comments in response to the GAO draft report. The substantive comments were not included in the final report by GAO. GAO did indicate their rationale for not incorporating DOT comments.

The National Highway Traffic Safety Administration and the Federal Highway Administration already have a number of activities underway that address the small car performance discussed in the GAO report. As a result of the GAO study, we will review our current efforts to analyze the small car safety issues with emphasis on greater use of accident data to identify problems needing program changes or new research efforts. To the extent these analyses provide additional insight to the small car safety problem, the findings will be incorporated into our ongoing research program.

IV. STATUS OF CORRECTIVE ACTION: The Department's response to the GAO final report will address each GAO recommendation, but the Department does not concur with many of the GAO statements. Our positions on the recommendations are identified and addressed in the same order as in Section II.

Recommendation 1.

As we stated in our response to the GAO draft report, this is one of the fundamental missions of the Department in the field of motor vehicle safety.

Considerable work in this area is already underway in FHWA in response to the national attention the small car safety issue has been getting recently as a result of the rapid increase in the small car population. In the area of research and development these efforts have included: engineering analysis of the physics of suspected small car issues, measurement of vehicle properties, laboratory and full-scale testing, development and implementation of recommended improvements in the National Accident Sampling System's (NASS) data collection elements relative to the roadside, and analysis of reports from field offices on inservice roadside structure behavior. In the area of interagency coordination, FHWA's efforts have included, among other things, coordination of accident research findings with NHTSA counterparts and discussions with vehicle manufacturers and roadside safety hardware suppliers on the small car issue. A review of these activities will be made to determine if the proper emphasis is being directed toward smaller cars and to decide what efforts are required to more effectively use existing accident data.

The Department will continue to review all available data which quantifies the motor vehicle safety problem on the Nation's highways. While analysis of accident data will be a vital component, it is not sufficient to specify which "...smaller car safety issues need the Nation's greatest attention and which countermeasures can be used to reduce accidents, injuries, and fatalities involving smaller cars." Certainly accident data can establish targets of opportunity, but other aspects must be considered such as the cost of potential countermeasures and their anticipated effectiveness in reducing accidents, injuries, and fatalities. In many instances laboratory crash testing and countermeasure development are the only methods to obtain this information.

It is assumed that GAO is recommending that the Secretary establish a standard unit of measure for use by DOT. To this end, the recommendation is accepted. The Traffic Records Committee of the Transportation Research Board has established a subcommittee to develop a standard size classification system for passenger cars. This subcommittee will consider alternatives to current marketing terminology (e.g., compact, intermediate, etc.) for which definitions change from year to year. Both the NHTSA and the FHWA have representatives on this committee. One possible alternative employs the use of Vehicle Identification Numbers since they identify specific vehicles and thereby can be used for many different purposes. Where changes are made in the establishment of standard units of measure, both agencies will coordinate to develop a single set of units.

It should be noted that, although GAO did not recommend it, DOT believes that standard units of measurement for other motor vehicles, e.g. light trucks, vans, and heavy trucks, are equally important. Without such standard units, rigorous analysis of accident data is impossible.

If the GAO is recommending that the Secretary establish standard units of measure to define all size passenger cars, and that these be adopted universally, we cannot accept that recommendation. Many organizations--the States, EPA, and the motor vehicle industry--designate the sizes of passenger cars to satisfy their particular needs. As such, it would be conceptually impossible to impose standard units of measure throughout the public and private sectors. Futhermore, no change in units now can correct deficiencies in existing data but could cause discontinuities in self-consistent time series.

Relative to the second part of this recommendation, DOT assured GAO (in our response to the draft) that the Department will continue to examine the effects of both the driver and the roadway on smaller car performance. The joint FHWA-NHTSA research project, "Cost-Effective Geometric Design for Changing Vehicles and Limited Resources," should provide a comprehensive look at highway and vehicle standards as they affect highway safety. Small cars are emphasized in this study since they are one set of limits in the larger issue of vehicle size and weight.

It should be stated that each and every research program will not explicitly include both the driver and roadway. Crash testing includes both to the degree that the laboratory crash environment simulates the driver/roadway interaction in the real world. Again, the Department will continue to examine the effects of the driver and the roadway on smaller car performance.

Recommendation 2.

As stated in our response to the draft GAO report, a joint NHTSA-FHWA Executive Coordination Group already exists. This Executive Coordination Group assigns tasks to working groups which are composed of specialists from the various offices. For example, a NASS Working Group has been in operation since 1980 in an effort to assure that NASS data is relevant to the needs of both the NHTSA and FHWA. Also, a Small Car Working Group has recently been established to examine issues concerning small car safety. All aspects of small car safety are being considered in this working group, including compatibility between small cars and roadway appurtenances, driver sight envelopes in small cars being driven on various roadways, and the crashworthiness of small cars, as well as the anticipated safety effects of the increased number of small cars entering the fleet.

Currently, input from State, industry, academic, and private groups is obtained through formal and informal channels. This ongoing activity will be evaluated to determine if advice from outside groups can be accommodated more effectively and efficiently.

It should be noted that the small car safety issue cannot be viewed independently of the total motor vehicle fleet in all DOT highway safety programs. As smaller cars enter the fleet, larger ones are disappearing or being utilized for a much smaller portion of vehicle miles. All research programs must recognize this ongoing fleet change, and that the change is likely to continue for some time.

As measures are developed for improving crashworthiness of small cars, it must be recognized that considerable time is necessary to include these into production cars. This time, coupled with the time necessary for the vehicles with improved crashworthiness to become a significant portion of the fleet, requires that small car safety be viewed in the context of the entire motor vehicle fleet.

Relative to the second point of this recommendation, we are considering a National Accident Sampling System (NASS) special study to investigate small car safety. NASS already contains special studies which will address the issue of small car performance when they impact roadside hardware or crash attenuators. It should be noted that such studies are lengthy and expensive. For example, a current study on roadside barriers and crash cushions will require about 4 and 6 years, respectively, to collect sufficient data to permit analysis, even though 30 teams are being utilized. Currently, each accident investigation costs about $600. Therefore, before we can specify what additional special studies should be performed, it is necessary to identify what we want to learn from the study, and whether NASS can provide it.

On the third point, DOT indicated the weaknesses and limitations of State accident data in the response to the GAO draft report. When it is appropriate, State accident data are utilized to answer specific questions about safety issues. DOT will continue to use State data and utilize it to supplement test data which is available when this approach is considered appropriate.

FHWA will review a number of State accident report forms and data files, including New York and Michigan, to assess the potential for supplementing test data. The review will involve examining data files for the degree of detail and the capability for linking accident information to other physical inventory files. One problem, however, is the variation between States in data that are collected. Each State uses definitions and categories which suit their needs but lack of consistency limits the usefulness in nationwide comparisons, except in very broad categories.

Recommendation 3.

As GAO indicated in their final report, this recommendation does not require a halt to ongoing research. As part of DOT's internal process, research is constantly reviewed to ensure that it is consistent with Departmental policy. Additionally, countermeasure research priorities are established based upon accident data analysis.

Both NHTSA and FHWA have conducted, and are continuing to perform, analyses of the small car safety problem. As DOT stated in the response to the GAO draft report, sufficient data are available to identify the major vehicle-related safety problems. In a recent NHTSA paper utilizing the National Accident Sampling System (NASS) data ("A Search for Priorities in Crash Protection," by A. Malliaris, et al., SAE Paper, February 22-26, 1982), the most significant problems were identified as occupant injury from contact with steering columns, instrument panels, windshields, side door surfaces and A-pillars, as well as occupant ejection from doors, windows, and windshields. This NHTSA paper also concludes that the overall fleet fatalities from all accident modes will remain remarkably unchanged with increases in the percentages of smaller cars. Current work in FHWA is directed at problems that already have been clearly identified, e.g., single-vehicle accidents involving roadside devices such as signs, utility poles, and barriers.

> DOT is utilizing the results of such accident analyses to direct our research program for improving vehicle safety including small cars.
>
> The development of countermeasures will allow DOT to estimate the costs of incorporating them into the motor vehicle and the highway environment. The performance of the countermeasures in laboratory crashes, as well as accident data, will provide the data for estimating the real world benefits.

For reasons given previously, the lead time required to solve the critical questions already firmly identified for small car safety is such that a more aggressive attack, rather than further delays, is fully justified within the constraints of available resources. Changes in the highway/vehicle environment and characteristics are so dynamic and shifting that waiting to act until "all the facts" are known would be counterproductive. In addition, the problems of relying principally on the analysis of accident data as a basis for either a research program or an action program to deal with the small car problem are well-documented. Our comments on the GAO draft report explained fully what these limitations are and why we must combine accident data analysis with other approaches for a fuller understanding of small car safety. Any safety countermeasure has to be evaluated across the fleet to assure that fatalities are not just being shifted within the fleet, but that the countermeasure does indeed reduce overall fleet casualties. The Department believes that countermeasures and supporting research should be prioritized considering benefits and costs for the entire fleet.

Mr. Glickman. I have one final question. Your report stated that it was indisputable that there is increased risk to injury when involved in an accident in a small or compact car. I just want to make sure that that is your analysis of the research data available to date.

Mr. Peach. I think that the reference there may be more in the context of what some of the research has shown. But where we could center in on the data we saw, it is indisputable that a small car in an accident with a larger car, the occupants in a smaller car have a far greater chance and risk of a fatal injury, two to four times greater.

If you are looking at a small car in accidents with other small cars, if you are looking at the small car in single-vehicle accidents, the data is not consistent. It is unclear as to exactly whether there is greater risk in those particular kinds of cases.

Mr. Gore. Would my colleague yield?

Mr. Glickman. Yes.

Mr. Gore. Looking at the transportation system we now have where you have small cars, medium-size cars, big cars, trucks, et cetera, in the world we live in, the evidence is indisputable that people who ride in small cars are more likely—a lot more likely—to be injured in any accident that occurs. If you look at all of the accidents that occur between the vehicles on the road, then people in small cars are more likely to suffer serious injury or death than people in larger cars; does the evidence indicate that?

Mr. Peach. I would have to say that I don't think we exactly broke down the information in those kinds of ways. We broke down the information in categories of multivehicle accidents where it was a small car involved with a large car, two small cars in the accident or single-vehicle accidents where it was a small car and a single-vehicle kind of situation, either a rollover, colliding with a guardrail, pole or some other kind of thing. We tried to look at that fairly carefully, and we found again that the problem is, when involved in a collision with a larger vehicle, that the danger is much greater for the occupants of a smaller car. But there is not a clear pattern that exists when you look at the data and the research that has been done when it is a single-vehicle kind of accident.

Mr. Gore. But it seems very clear that if there is no difference in single-vehicle accidents and there is no difference in accidents between vehicles of the same size, and if there is a very big difference in accidents between small cars and large cars, then if you lump those three categories together, overall, people who ride in small cars have a greater chance of sustaining serious injury or death in the total number of accidents that occur.

Mr. Peach. In a sense, if you refer back to a statement that was made in the testimony, the rate of deaths for the number of small subcompact cars on the road is more than twice than for full-size cars. There is a disproportionate number of fatalities that do occur in the smaller cars. When you look at it in that kind of sense, that is true.

Mr. Glickman. Thank you.

Mr. Walker.

Mr. Walker. Based upon the research that you have broken down in your report—having glanced through it, it is excellent—I would assume then that there is a body of evidence, factual data, that has been compiled over the years to show that the European experience with automobiles is far higher fatality rates and far higher accident rates than we have in this country?

Mr. **Donohue**. We didn't break our study down according to the manufacturer of the car.

Mr. **Walker**. No; the experience in Europe where they have been driving small cars for years. During the same time that we were driving large cars, they were driving small cars. I would assume that over all of those years, you found a far higher fatality rate and a far higher accident rate in Europe during those years; is that right?

Mr. **Donohue**. We just studied what occurred in the United States. We didn't compare Europe or Japan.

Mr. **Walker**. Why wouldn't we look at the European experience for small cars, which has been the way in which they have gone for a long, long time?

Mr. **Peach**. I think your comment is certainly a valid comment. Our study was not one to do a comparison as to what exists in the United States versus what exists in Europe. There are, of course, other factors you would have to get involved in. In studying it in the United States, we would be looking at our roadway system as it is designed and as it is laid out. There also may be differences, for example, in terms of the roadway system design and other kinds of things like that. There are other variables.

But you are correct. That kind of analysis could be done.

Mr. **Walker**. The focus in your report, though, and the focus of this subcommittee is on small cars. Probably we will come out with a report, you have come out with a report, that will focus on what we are going to do about correcting the car because of all of these things that are happening to occupants, and so on.

My question is this: Shouldn't we be looking at cars if we are doing this kind of research? And the place where you can take the best look at small cars and what they have done and what their performance has been is where they have been utilizing small cars for far longer than we have been in this country, namely Europe and Japan, but particularly Europe. Europe, for years, has had experience not only with small cars, but they have experience with small cars going a heck of a lot faster than we drive them in this country because they have unlimited speed limits.

So, what I am saying is it seems to me that there ought to be a body of data that we could look at here that would show these kinds of things and begin to tell us something about relative safety of small cars; shouldn't we? Why isn't that included in the research that is being done?

Mr. **Peach**. I think your comment is a valid comment. The only thing I can say in terms of our own study is the scope of the work that we set out to do was really look at the information that existed within the United States on small cars and try to find out what that experience could tell us about how we establish our research priorities. I would not for a minute argue that it would be useful to have information on that kind of experience as exists in other countries in the world that also use small cars.

Mr. **Walker**. OK. The reason why I bring that up is because I think that when we don't take a look at that kind of data, we also begin to ignore other kinds of data. For example, I noticed that your report mentioned, for instance, the age of drivers might be a factor in all of this. It seems to me that that might be a tremendous factor in taking a look at small cars, because the fact is that very few young drivers at the present time can afford to buy a large car. If they go out to buy a new car, the young driver is limited to only small cars, at a relatively modest income because there are no large cars at a modest price available in the American market at the present time; isn't that true?

Mr. **Peach**. That is correct.

Mr. **Walker**. So, therefore, what you are doing is you are skewing the age group driving the cars toward the younger group where insurance figures have told us for years that there is a greater volatility of accidents; isn't that true?

Mr. **Peach**. Right.

Mr. **Walker**. So that the mix of the age of the drivers is very likely to be toward a younger group in smaller cars; isn't that right?

Mr. **Peach**. A lot of people have indicated that or suggested that on the basis of research.

Mr. **Walker**. And that is going to have an impact on your accident rate and probably on your fatality rate because the fatality rate is also larger for those younger drivers; isn't that correct?

Mr. **Peach**. Correct.

Mr. **Walker**. It seems to me that that becomes an extremely significant factor in analyzing data with regard to small cars, and it is something which once again may not be correctable by virtue of what you do to correct the car. Yet, it seems to me the focus of what may come out of these hearings and what may come out of other studies is that we want to correct the car.

That leads me then to another point. Can we assume that in the hands of an expert driver, somebody that really knows what they are doing—can we assume, based upon the research that they are driving a safer car when they are driving a small car or when they are driving a large car? Which, in the hands of an expert driver, is likely to be the safer car?

Mr. **Peach**. I certainly don't have the answer to that. You are assuming in that case the driver becomes the key variable.

Mr. **Walker**. That is right. The driver does become that. And your report says the smaller cars may be more maneuverable than larger cars, which may be a safety advantage. That means that the ability to avoid an accident in a smaller car is a good deal greater. So that becomes a factor.

Then you also say in the report:

> They note, however, it is questionable whether advantages in handling and maneuverability can be related to vehicle safety because these advantages depend upon the driver's ability.

Mr. **Peach**. I suppose the comment I would make on that, of course, is not all the drivers on the highway, most of them, aren't expert drivers. There is a lot of information in the report that, based on the accident data we could get from the States of Michigan and New York, look at cars broken down by weight and the proportion they represented of cars involved in accidents. They found a very close correlation between the percentage cars in the vehicle fleet in those States and the percentage of cars involved in accidents. So there seems to be a very close correlation between the amount of cars in the fleet and the amount of cars involved in accidents.

Mr. **Walker**. Once again, my point is that too much of our focus when we get into automobile safety tends to be on building ourselves a car that is safe for people who aren't very expert at handling the car, at which point, I suppose, giving every American an M-1 tank probably would be a safe way to go.

But the point is—and I am a former driver education instructor, I helped pay myself through college teaching driving—I am appalled at how easy it is to get a license in this country. Nearly any idiot can go out and get a license to drive what is basically a weapon in their hands when you put them behind the wheel.

I think that one of the things we ought to be looking at in this country is improving the skill of the drivers in the country, at which point what I am saying is that, in many instances, a small car is a far more maneuverable vehicle and, therefore, a far safer vehicle than a large car is. I would say that at relatively the same price, a Cadillac Cimarron, which is out and which is a small car, is a good deal safer car in the hands of an expert driver than a Sedan deVille is, simply because the maneuverability of that car is significantly greater. Somehow I don't see that kind of data getting reflected in some of this research either.

Mr. **Peach**. If I could take a moment to make a couple of points that I think are useful points to make in this area.

Mr. **Walker**. Sure.

Mr. **Peach**. No. 1, our focus, as we see our report, is not on the idea of saying that necessarily the correction is the car. But our focus is more on researching the accident data to try to decide where your research focus should be.

Now, in terms of really getting a better handle on this, we think the place you have to start is the raw data on cars by size or some other criteria and the kinds of accidents that are occurring that they are involved in. Once you get that basic data from a number of States, the safety administration does have a process in effect through making specific studies under their National Accident Sampling System of trying to zero in on problem areas that may be identified by the kinds of accidents that are occurring. They can study in more detail, through having teams around the country, a number of variables that are involved in those accidents, and using that data to better define really what are the problems based on those variables and make recommendations about what kind of actions they can take.

Mr. **Walker**. May I assume from that that you are saying that some of the things that I am raising here are valid concerns?

Mr. **Peach**. That is right.

There is also an example that we find interesting in light of the safety administration's comments on our reports about using accident data to look at how they should develop their research priorities and programs. Very recently, last year, they were required by one of the appropriation subcommittees to look at large truck accident causation through using accident data. They went through a process in looking at large trucks that we find to be a fairly reasonable process and methodology for using accident data. This process began to get a handle on research priorities, through getting public comments, through trying to get all of the people that were knowledgeable involved, in getting agreement on how to conduct the research, what kind of data to use. Then they came out from there with a report that made recommendations on a variety of things to do, information that should get out to people, changes that should be made in various aspects of safety programs on drivers, and also research priorities in that area.

That turns out to be an example of where the accident data was used as the starting point to begin to decide how you structure the priorities for your program. We think it is a reasonable one.

Mr. WALKER. Thank you, Mr. Chairman. I have more than used my time.

Mr. GLICKMAN. That is fine.

Mr. Gore, did you have some final comments?

Mr. GORE. I wanted to say briefly, first of all, that I think the kind of information that my colleague from Pennsylvania was asking you about, Mr. Peach, is some of the same kind of information that NHTSA should be gathering. Did you find any evidence that they had gathered the kind of data that Congressman Walker was asking about?

Mr. PEACH. They have certain information systems that gather some basic data about fatalities in cars. It does not gather comprehensive information, for example, on serious injuries except when a fatality was also involved. When you look at the number of fatalities, which you are talking about 50,000, but you are also talking about 2 million more serious injuries. You want to look at protecting the occupants in both areas, so you really need to expand that kind of research.

Really, the basic place we found data that we think you can make use of is through the States, the data they have, and certain of these other research organizations.

Mr. GORE. Second, I would like to comment on my colleague's statements about the driver education and driver safety. I would like to agree with him. I think it is an important effort. I would be interested in asking Mr. Peck what has happened to NHTSA's efforts in that regard, because I agree they are very valuable programs.

Finally, I would like to say that I agree that there are, of course, many, many factors that affect the fatality rate and the injury rate in automobiles. Drunk driving is probably the biggest single factor. I am glad and optimistic that our society is moving toward a resolution of the issues there and dealing aggressively with that issue. Driver education that I mentioned is another, and there are others.

But we have learned in industrial societies that mass-produced products tend to interact in predictable ways with the people who use them. If we have the same kind of product replicated millions of times and distributed widely throughout our country, and we clearly perceived the same sorts of injuries and personal tragedies occurring over and over and over again, there are things that can be done to the design and performance of those machines—small cars in this case—which can avoid many of those accidents so that they need not occur with the same frequency in the future.

What you are telling us here are two things. No. 1, we are not organizing our effort through NHTSA to perceive the nature of that continuing tragedy as clearly as we might. No. 2, we are not organizing the effort to change those things which could be changed to avoid so many of those tragedies in the future. It seems like a simple enough thing that the majority of the people in this country would like to have done.

Thank you, Mr. Chairman.

Mr. **Glickman**. I want to thank you for your testimony.

Again, I might point out that nearly 3 years ago, a DC–10 went down at O'Hare Field and killed over 200 people. We effectively have just as many traffic fatalities occurring every day in this country, or will be by 1990, with 70,000 fatalities. I think what you, Mr. Gore and Mr. Walker, brought out is that we have a synergistic problem with car size, as well as driver competence. I think what I have gotten out of your testimony is that there is not a sufficient factual data base to be able to allow us to make certain policy judgments on what to do. I am appreciative of your testimony today, and we thank you for coming.

Mr. **Peach**. Thank you, Mr. Chairman.

Mr. **Glickman**. Our next witness is Dr. William Haddon, president of the Insurance Institute for Highway Safety.

Dr. Haddon, it is a pleasure to welcome you here to this joint hearing. You may feel free to proceed in any way you want to. I will again remind you that your entire statement will appear in the record.

STATEMENT OF WILLIAM HADDON, M.D., PRESIDENT, INSURANCE INSTITUTE FOR HIGHWAY SAFETY

Dr. **Haddon**. Thank you, Mr. Chairman.

I ask that my full prepared testimony, including the footnotes and attachments, be included in the record.

The Insurance Institute for Highway Safety is an independent public service organization. It is a nonprofit, tax-exempt, scientific, and educational organization dedicated to reducing the losses—death, injury, and property damage—resulting from crashes on the Nation's highways. Supported directly or indirectly by companies writing most of the motor vehicle insurance in the United States, the institute conducts research involving a wide range of precrash, crash, and postcrash factors that contribute to the huge losses resulting from highway crashes.

I am appearing today in response to your request for information concerning the hazards of small cars. My testimony will summarize institute research findings that relate to this subject, and also address some of the basic misunderstandings about small car hazards.

Since the energy crisis of 1973–74 and the adoption of 55-mile-per-hour speed limits, the number of persons fatally injured in the United States annually in motor vehicle crashes has ranged between 47,000 and 52,000. Just over half of these are occupants of passenger cars.[1]

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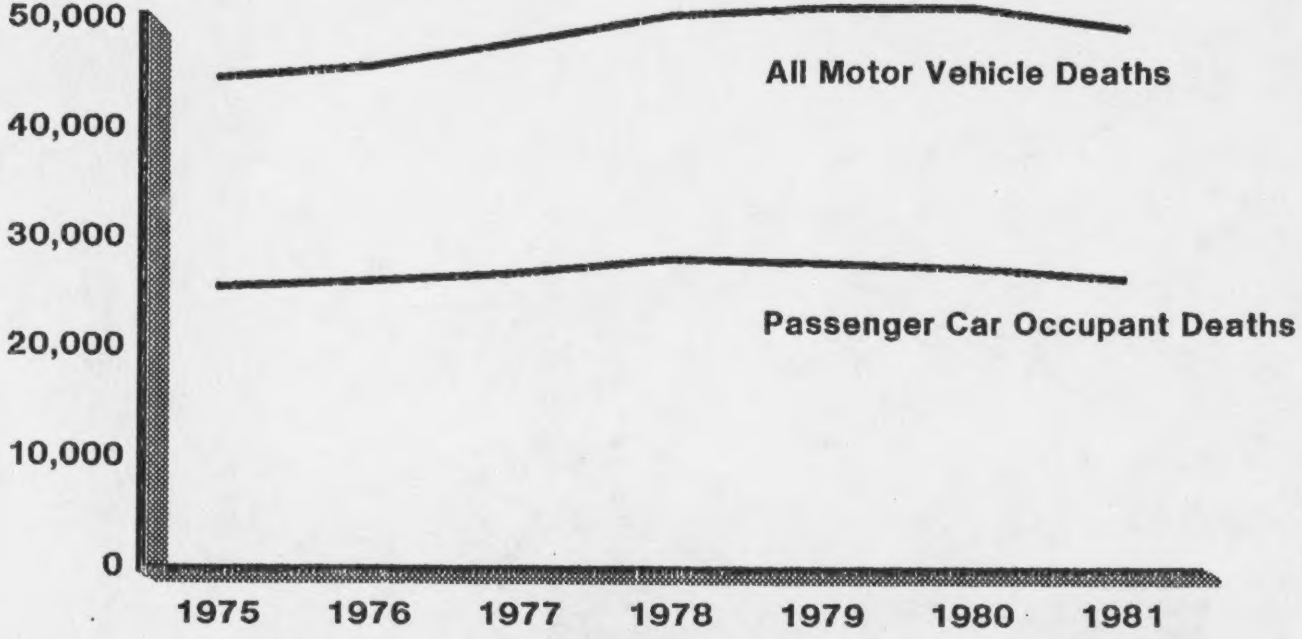
[1] The death total in 1982 will be lower, probably about 45,000. Much of this decline can be attributed to the state of the economy, since it has been known for some time that the number of motor vehicle deaths rises and falls with changes in the health of the economy. The reasons for this relationship are not fully understood.

Motor Vehicle Deaths 1975-1981



SLIDE 1

The first slide [slide 1] shows total numbers of motor vehicle deaths together with numbers of passenger car occupant deaths during 1975 through 1981. Although total motor vehicle deaths and passenger car occupant deaths remained nearly constant during this period, the sizes of the cars involved in crashes with occupant deaths changed substantially. In particular, the number of deaths in large cars decreased while deaths in small cars increased.

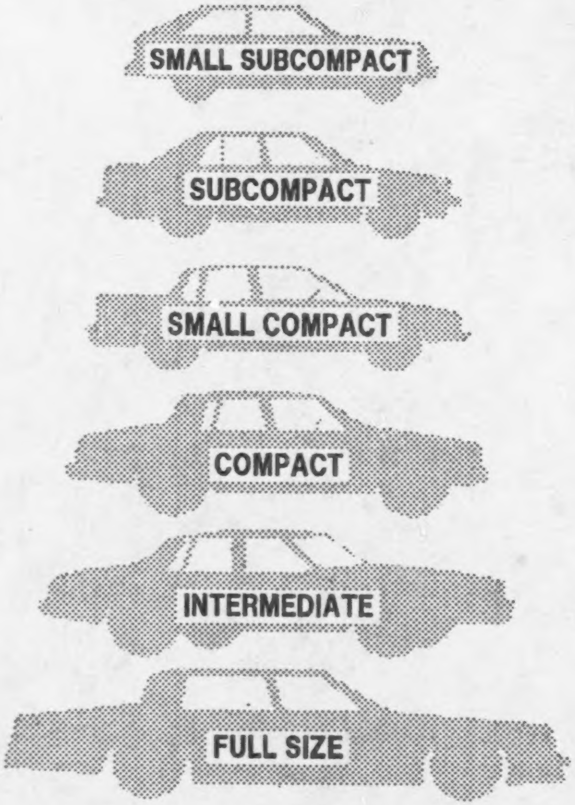
What is meant by small cars?

IIHS/HLDI Car Size Definitions

	Wheelbase
SMALL SUBCOMPACT	less than or equal to 96"
SUBCOMPACT	greater than 96" and less than or equal to 101"
SMALL COMPACT	greater than 101" and less than or equal to 106"
COMPACT	greater than 106" and less than or equal to 111"
INTERMEDIATE	greater than 111" and less than or equal to 120"
FULL SIZE	greater than 120"

The next slide [slide 2] shows the vehicle size definitions used by the institute. Because it is important to use objective definitions of car sizes in analyses of real-world crash experience, the institute classifies cars into size groups according to wheelbase.

Examples of Cars by Size - 1982 Models



SMALL SUBCOMPACT	Chevrolet Chevette 2-Dr Datsun 210 Ford Escort	Honda Civic Toyota Corolla
SUBCOMPACT	Chevrolet Chevette 4-Dr Dodge Aries Ford Mustang	Honda Accord Toyota Corolla Tercel
SMALL COMPACT	Chevrolet Citation Chevrolet Cavalier	Ford Futura Oldsmobile Ciera
COMPACT	Chevrolet Malibu Ford Thunderbird	Oldsmobile Cutlass
INTERMEDIATE	Chevrolet Caprice Chrysler Cordoba	Ford LTD Oldsmobile 98
FULL SIZE	Cadillac Brougham Cadillac DeVille	

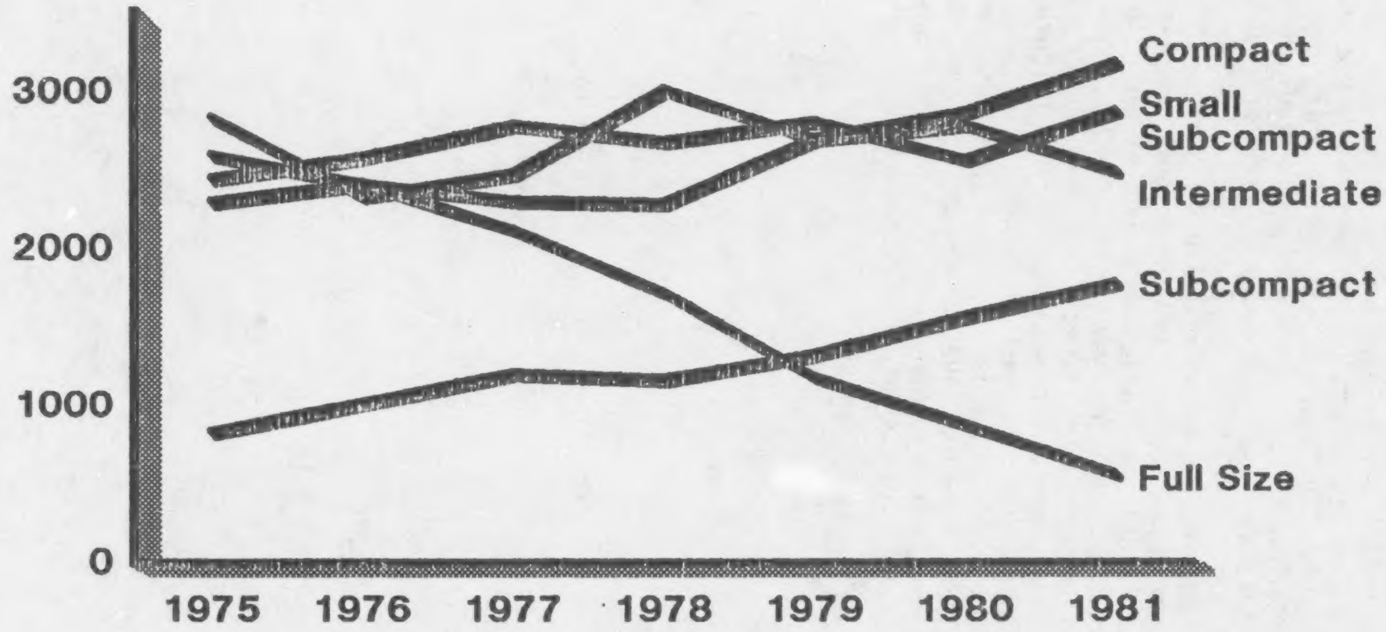
This slide [slide 3] shows some popular 1982 models classified according to the institute's size definitions.

I note that this objective definition avoids the problem of using manufacturers' definitions which slide with marketplace conditions, which has led to a good deal of the confusion over this issue. We do not suffer from that confusion because we use standard definitions.

If small cars are simply scaled-down versions of large cars—and this is the case for most small car designs today—then the laws of physics dictate that the crash forces reaching the occupants of small cars are even more severe than the forces reaching the occupants of larger cars, all other conditions being equal. This, in turn, must mean more frequent and more severe injuries for the occupants of small cars involved in crashes.

I notice as an aside that it is also important that vehicle occupants fared disproportionately worse the higher the crash speed and the smaller the car. This makes maintaining the 55-mile-an-hour speed limit especially important as cars are made smaller.

Occupant Deaths in 1-5 Year Old Passenger Cars

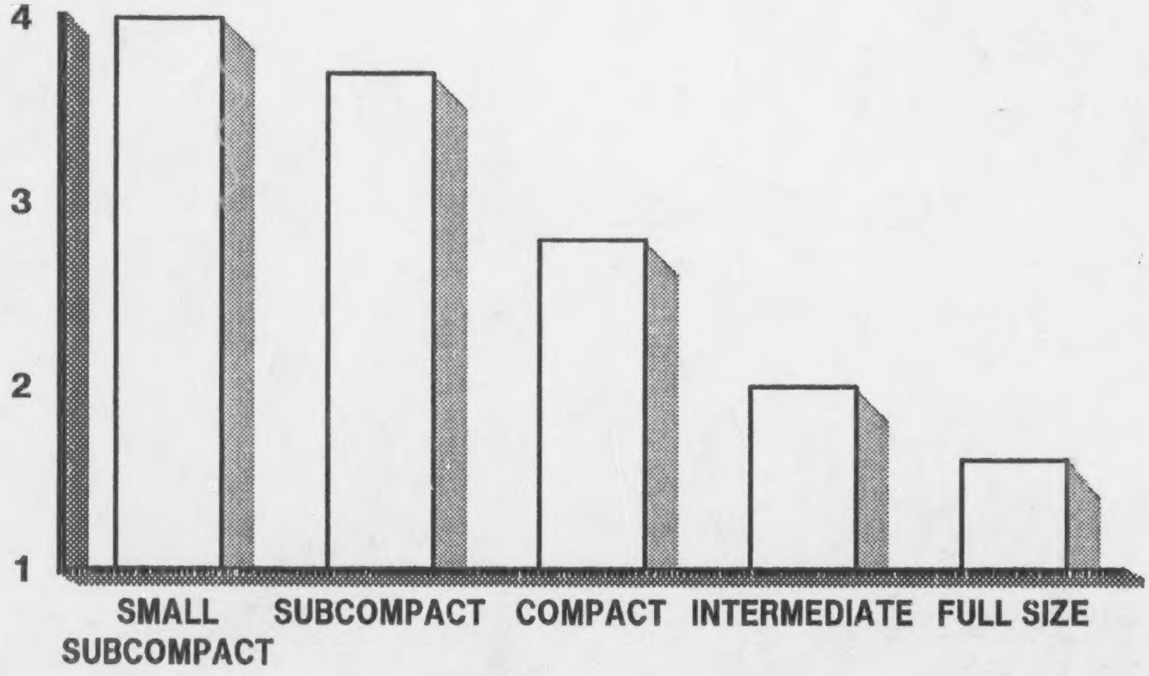


SLIDE 4

As the next slide [slide 4] illustrates, the number of occupant deaths in full-size cars 1 to 5 years old fell dramatically during 1975 through 1981, while deaths in subcompacts and small subcompacts increased. In fact, the number of deaths each year increased for each of the three smallest car size groups. This increasing number of deaths in small cars is a reflection of two factors. One is that during the period 1975 through 1981, the number of small cars was increasing while the number of full-size cars was decreasing, as everybody knows. The second is that the current small cars offer substantially less protection to their occupants in crashes than large cars. This latter effect has serious consequences for the number of passenger car occupant deaths.

It has been repeatedly documented that occupants of small cars, when they are in crashes, have a much greater likelihood of sustaining serious or fatal injuries than do occupants of large cars.

Percentage of Drivers with Serious & Fatal Injuries
1972-1980 Models
Maryland 1974-1980



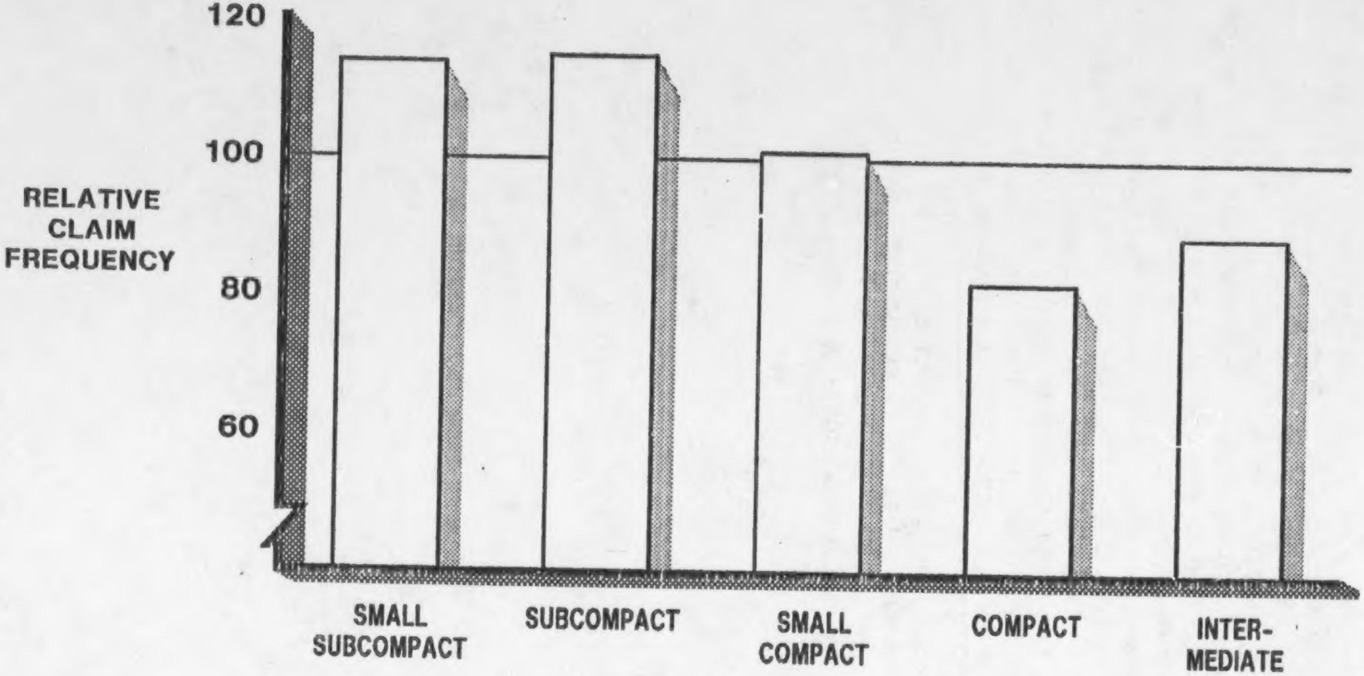
SLIDE 5

The next slide [slide 5] based on police accident reports from the State of Maryland, illustrates this point. It shows that the percentage of drivers in small subcompact cars sustaining serious and fatal injuries in crashes is about double the percentage of drivers of full-size cars sustaining such injuries.

Results such as these, while generally not disputed, sometimes are questioned as possibly overstating the hazards to occupants of small cars. One belief frequently expressed is that because small cars are more maneuverable—we have heard a comment to that effect earlier today—they are less likely than larger cars to be involved in crashes in the first place, and that this maneuverability offsets the disadvantages to small car occupants when they are in crashes. There is no evidence to support this, and what evidence there is suggests that small cars actually are more rather than less often involved in crashes.

Information on the involvement of cars in crashes by size is limited, but some of the most persuasive evidence to be found is from insurance collision coverage loss experience—that is, from insurance covering crash damage to cars.

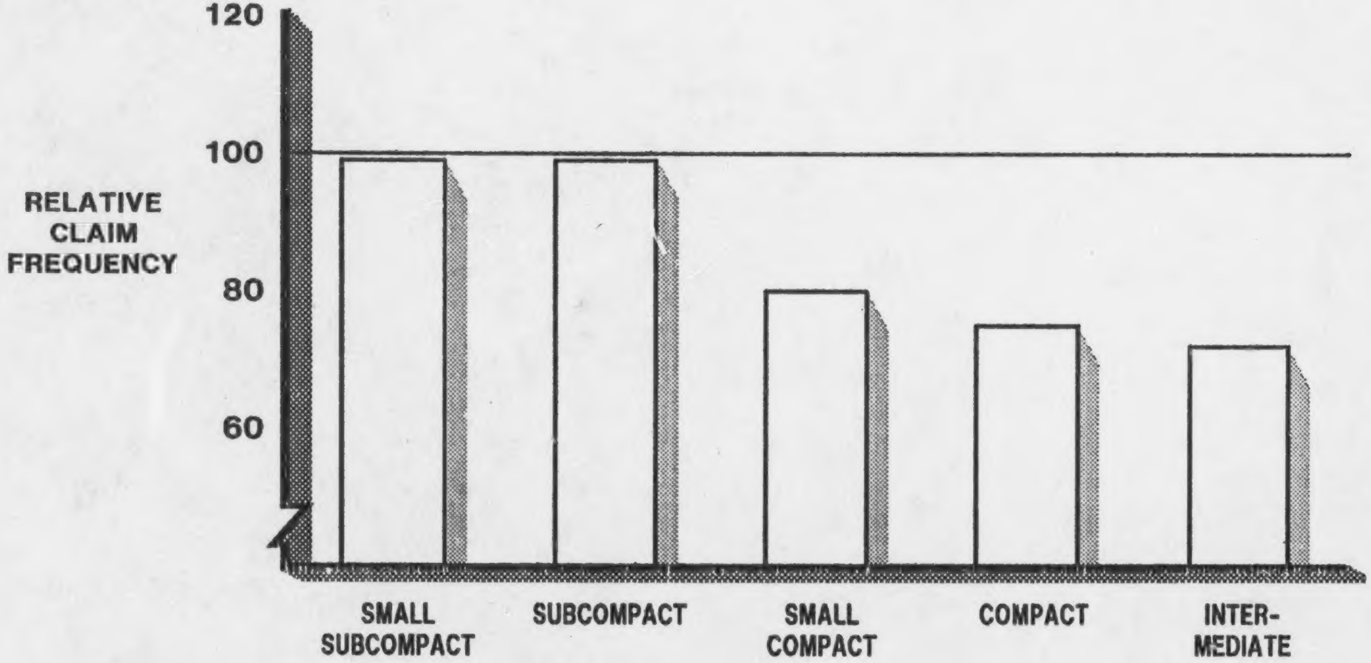
Collision Coverages
1982 Two-Door Models



SLIDE 6

The next slide [slide 6] shows the relative frequency of collision claims by size of car for 1982 model two-door cars. Small two-door models have a higher frequency of claims than larger cars.

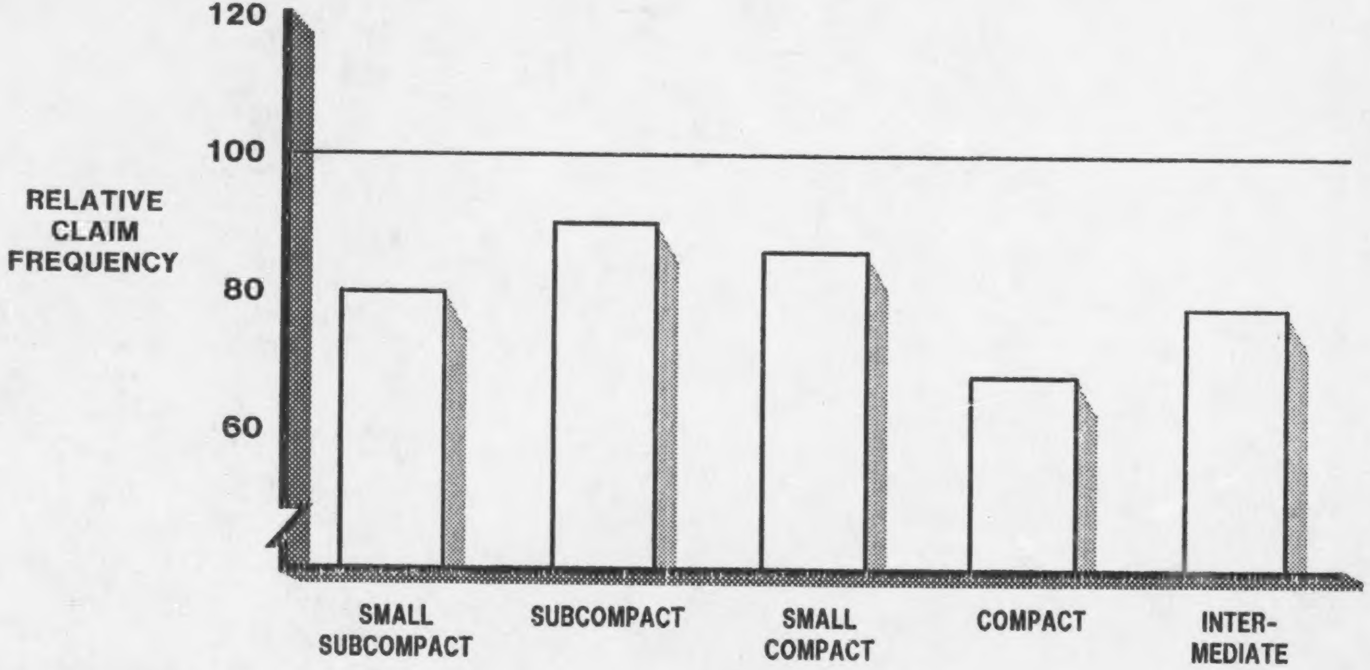
Collision Coverages
1982 Four-Door Models



SLIDE 7

The next slide [slide 7] shows similar results for 1982 four-door models. Again, there is a tendency for small cars to be involved much more frequently than large cars in crashes resulting in damage claims.

Collision Coverages
1982 Station Wagons

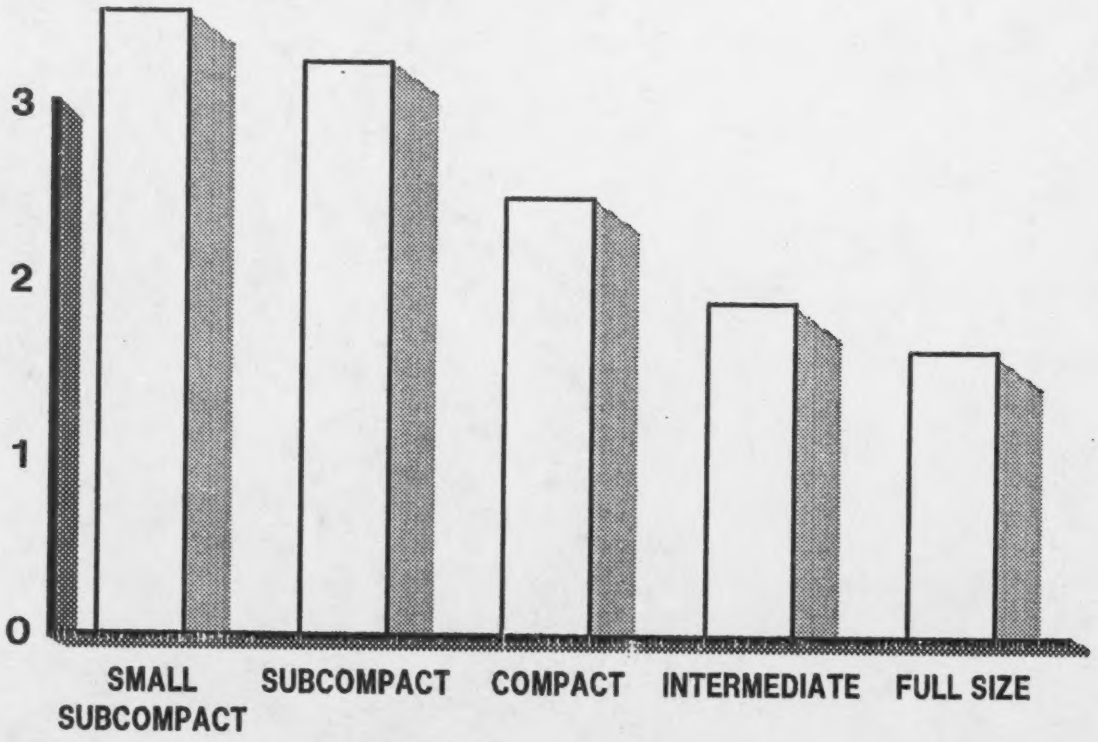


SLIDE 8

The next slide [slide 8] shows the results for station wagons. Although small station wagons are not overinvolved in crashes, there is no indication that they are less frequently involved.

In looking at the crash injury hazards associated with cars of different sizes, the institute has also compared the number of occupants killed each year in cars of a particular size in relation to the number of cars of that size in use—that is, the number of deaths in cars of a particular size per 10,000 registered cars of that size.

Occupant Deaths per 10,000 Registered Cars 1-5 Year Old Models in 1978-1980

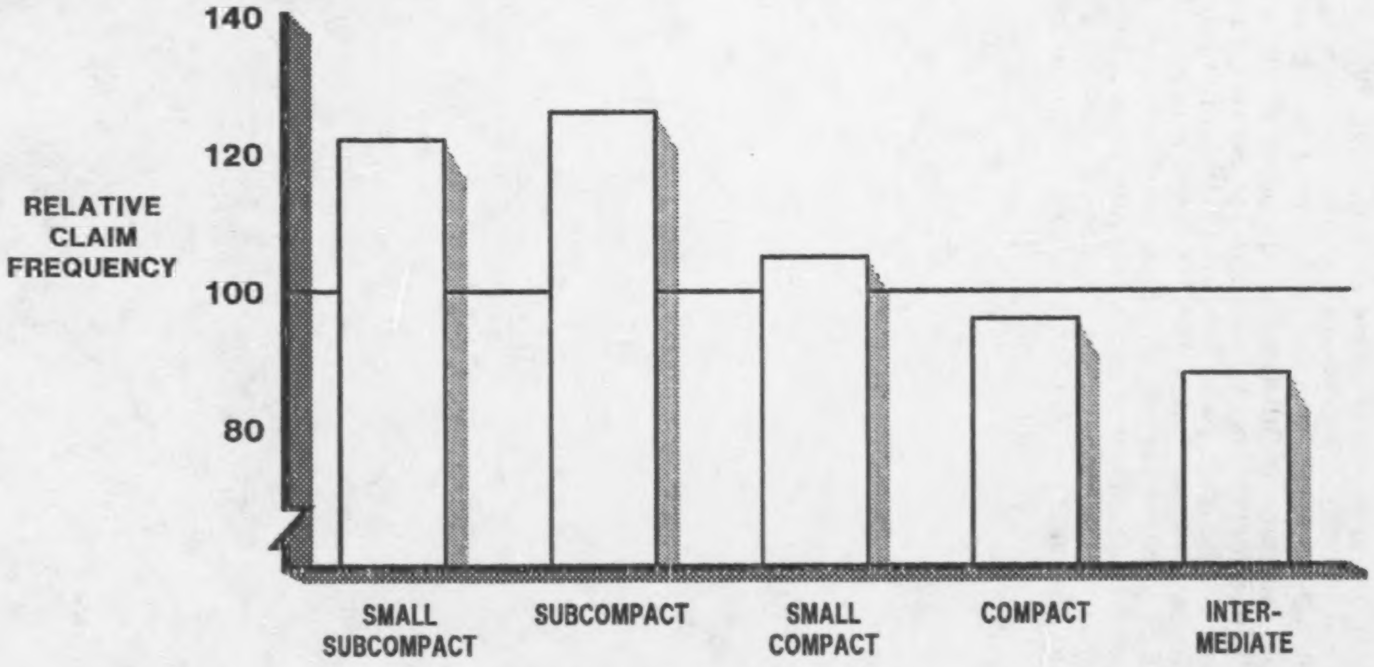


SLIDE 9

The next slide [slide 9] shows such results for cars that were 1 to 5 years old in calendar years 1978 through 1980. There is a pronounced relationship between occupant deaths and car size, with small subcompacts having an occupant death rate more than double the rate for full-size cars. In other words, for every 10,000 small subcompacts registered, there are between three and four occupant deaths each year, compared with only about 1½ occupant deaths each year for every 10,000 full-size cars registered.

Police accident reports and fatal crash experience thus indicate the greater likelihood of death or injury to occupants of small cars. Analysis of insurance claims for medical costs resulting from injuries to passenger car occupants yields a similar conclusion.

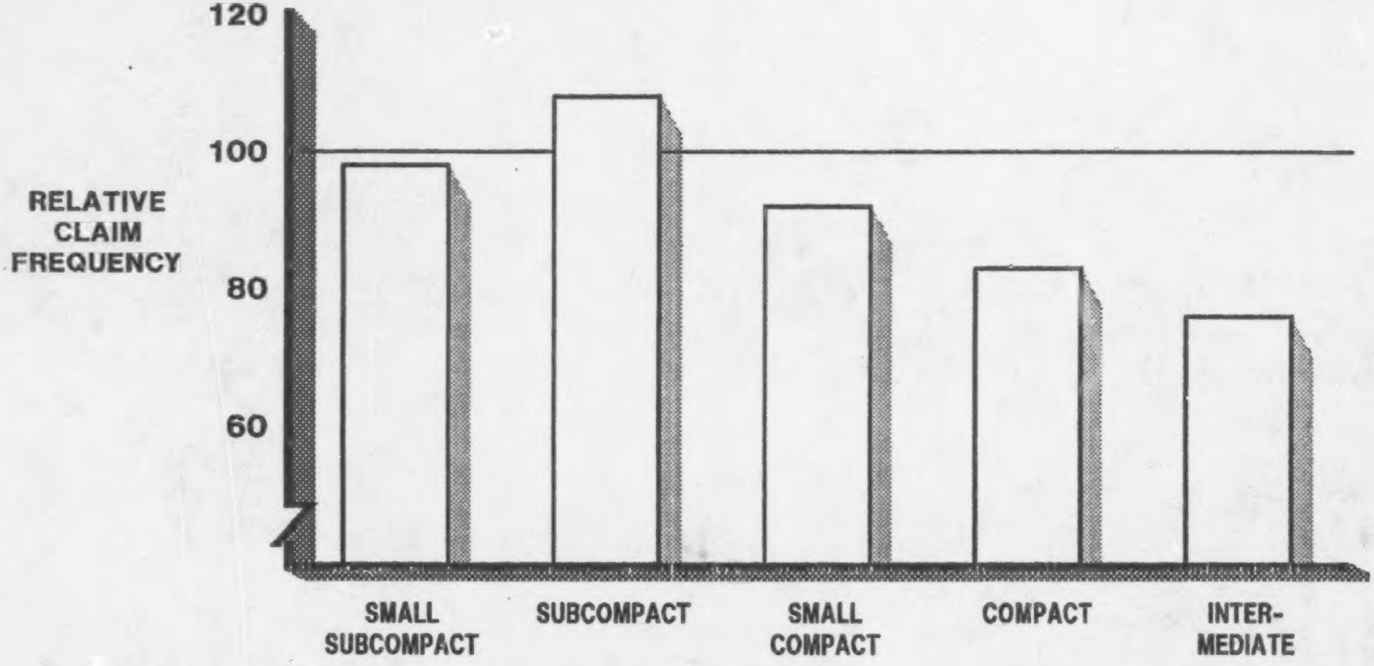
Personal Injury Protection Coverages
All Medical Claims
1979-1981 Two-Door Models



SLIDE 10

This next slide [slide 10] shows the relative frequencies of injury claims made under first-party no-fault insurance for occupants of two-door models by size of car. There is a clear relationship between injury claim frequencies and size of car, with small subcompacts and subcompacts generating many more injury claims per insured car than the larger intermediate-size cars.

Personal Injury Protection Coverages
All Medical Claims
1979-1981 Four-Door Models

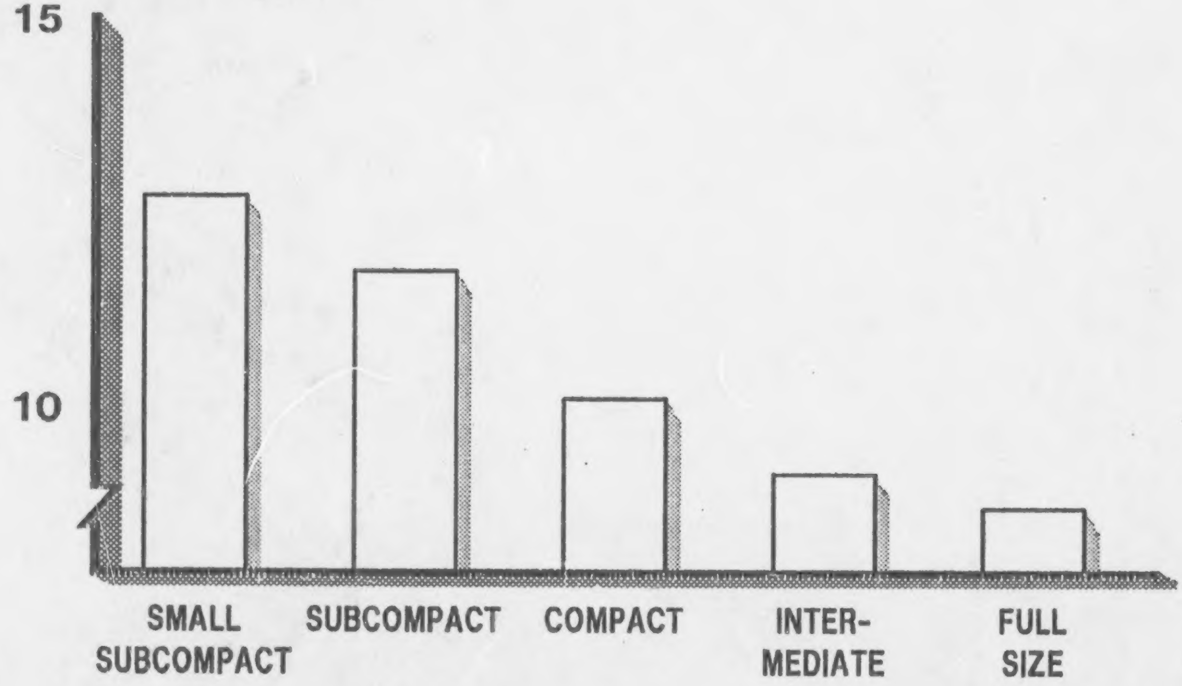


SLIDE 11

The next slide [slide 11] shows similar results for four-door models.

The results shown so far illustrate the increased risks to small car occupants in crashes in general. Are these added risks due primarily to the disadvantage of colliding with larger cars? If all cars were the same size, would there be no increased risks associated with driving a small car? A simple way to find the answers to these often raised questions is to compare the fatality and injury experience of occupants of cars of various sizes in single-vehicle crashes.

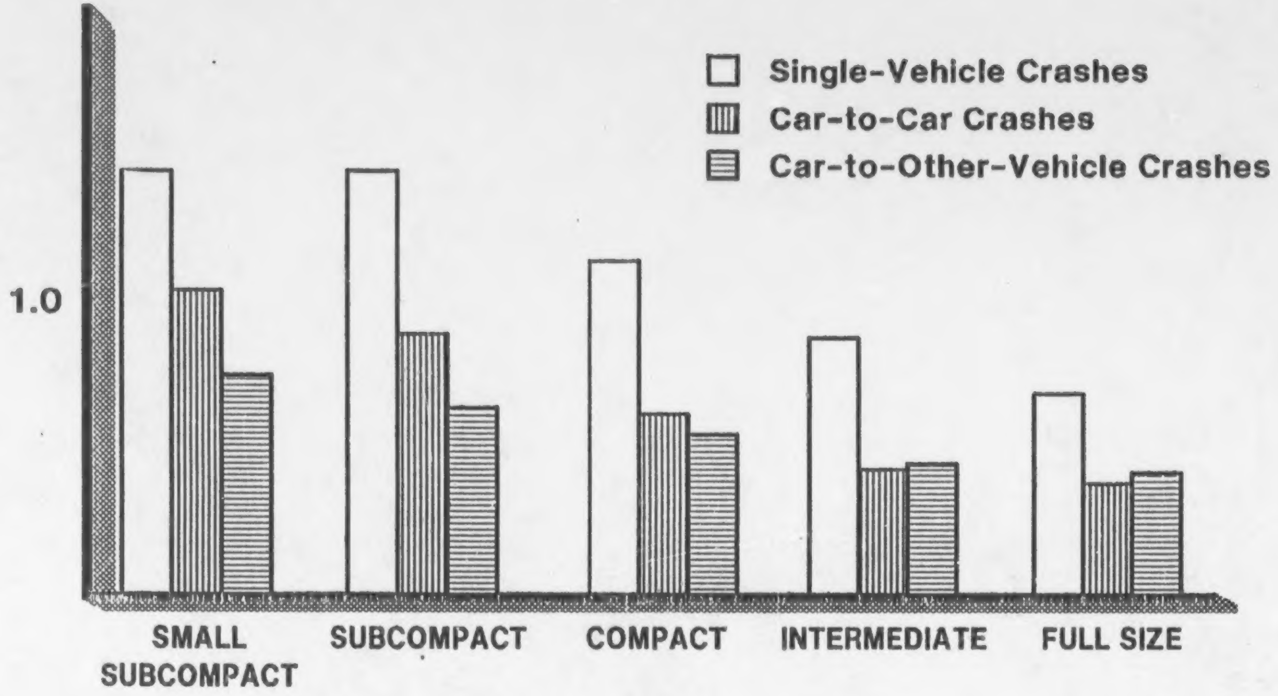
Frontal Crashes into Fixed Objects
Percentage of Drivers with Serious & Fatal Injuries
1972-1980 Models
Maryland 1974-1980



SLIDE 12

The next slide [slide 12] based on police accident reports in Maryland, shows that a greater percentage of drivers of small cars, as compared to drivers of larger cars, sustains serious and fatal injuries in single-vehicle crashes, those in which the size of "the other car" plays no part since no other car is involved.

Crash Type
Occupant Deaths per 10,000 Registered Cars
1-5 Year Old Models in 1978-1980



SLIDE 13

Another slide [slide 13] shows the numbers of deaths in single-vehicle crashes in cars of particular sizes per 10,000 registered cars of that size. Again, the fatality rate in single-vehicle crashes is much higher in small cars than in larger cars. As these data emphasize, the very serious disadvantages to the occupants of smaller cars would not disappear even if all cars on the road were small.

Mr. GLICKMAN. Let me ask you, the purple line on the chart there is car to car data, which means a small subcompact in a wreck with another small subcompact?

Dr. HADDON. These are classified by the car in which the death took place.

Mr. GORE. But the car-to-car category includes small vehicles hitting big vehicles?

Dr. HADDON. That is right.

Mr. GORE. What is your data base? Is that Maryland again?

Dr. HADDON. This, I believe, is Maryland—no, these are national data.

Notice the open bar is for single-vehicle crashes. The occupant deaths in such crashes increased progressively, going from the largest cars to the smallest cars. In other words, that is again for crashes in which no other car is involved.

You see the same thing in the crashes in which another car is involved, the bar with the vertical shading you just referred to. The pattern, in other words, is consistent, regardless of what kind of crash one looks at.

Mr. GLICKMAN. Let me just ask you a question. Do you have any data to show what the serious fatalities are when you have same class of car versus same class of car?

Dr. HADDON. Yes. It goes up progressively the smaller the car. We published that several years ago, and it has been available to GAO and others over that period.

That is an excellent question, by the way. It is one of the key questions in pinning this down, and it shows exactly the same thing.

It also has been asked whether the poor performance—and we heard this this morning—of small cars somehow is due to their being more often driven by young people who have a higher likelihood of involvement in motor vehicle crashes. Available data indicate that this is not the case. The insurance industry claims experience that you saw a moment ago is based on the same mix of youthful and nonyouthful operators and, thus, that experience is adjusted statistically to account for the fact that more young people drive small cars.

I note also that when this question was raised, by some of the importers in particular, about a year and a half ago, we looked at national U.S. experience and compared in that case—and I will come to this in a moment—the experience of the Japanese cars, which do worse as a group than the American cars. We looked at the average ages of the people dying in the Japanese cars as opposed to the American cars and found that the average was actually slightly higher in the Japanese small car than in the American small car, thus not accounting for the difference. It was apparently inherent in the automobiles.

Mr. **Gore**. Excuse me. I hate to interrupt you again, but this data indicates there is a higher fatality rate with single-vehicle crashes than with car-to-car crashes?

Dr. **Haddon**. This indicates that per registered car, there are more single-vehicle fatalities, and that those get greater the smaller the car. And there are fewer fatalities in two-car collisions.

Mr. **Gore**. But look at the small subcompact category in isolation for a moment. The open block is higher than the block next to it with the vertical shading.

Dr. **Haddon**. Yes. But these are per registered car and not per crash. I dealt elsewhere in my testimony with the per-crash data. This is taking the deaths, sorting them out by whether they occurred in single-vehicle crashes or multivehicle crashes, and doing this on a per-registered vehicle basis.

Mr. **Gore**. I think I understand what you are saying. But it says there are 1.5 occupant deaths per 10,000 registered small subcompacts in single-car crashes, but there are only 1 per 10,000 registered small subcompacts in car-to-car crashes.

Dr. **Haddon**. The inference would be reasonable if we knew that the crashes were of equal severity. But this does not take into account variations in severity. This is, again, per-registered car.

Mr. **Gore**. But it is the same for both, isn't it?

Dr. **Haddon**. The severity of the crashes?

Mr. **Gore**. The data is the same for car-to-car and single-vehicle. Maybe there is something very simple that is just running past me.

Dr. **Haddon**. Perhaps we could put a comment for this into the hearing record.

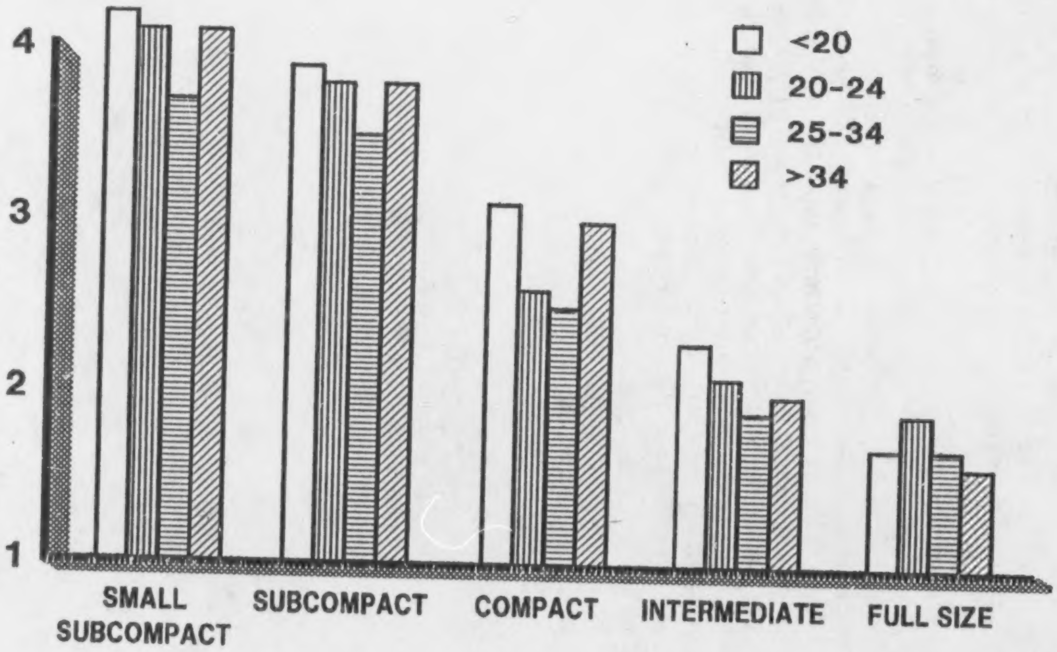
Mr. **Gore**. OK.

[Additional comment supplied subsequently by the witness:]

There are more fatalities per registered car in single-vehicle crashes than in two-car crashes [slide 13]. In both kinds of crashes, fatalities per registered car become greater the smaller the car. It should be noted that two kinds of fatality rates are cited in this statement—the rate per registered vehicle and the rate per crash. Both of these rates are higher for small cars than for large cars.

Driver Age

Percentage of Drivers with Serious & Fatal Injuries
1972-1980 Models
Maryland 1974-1980



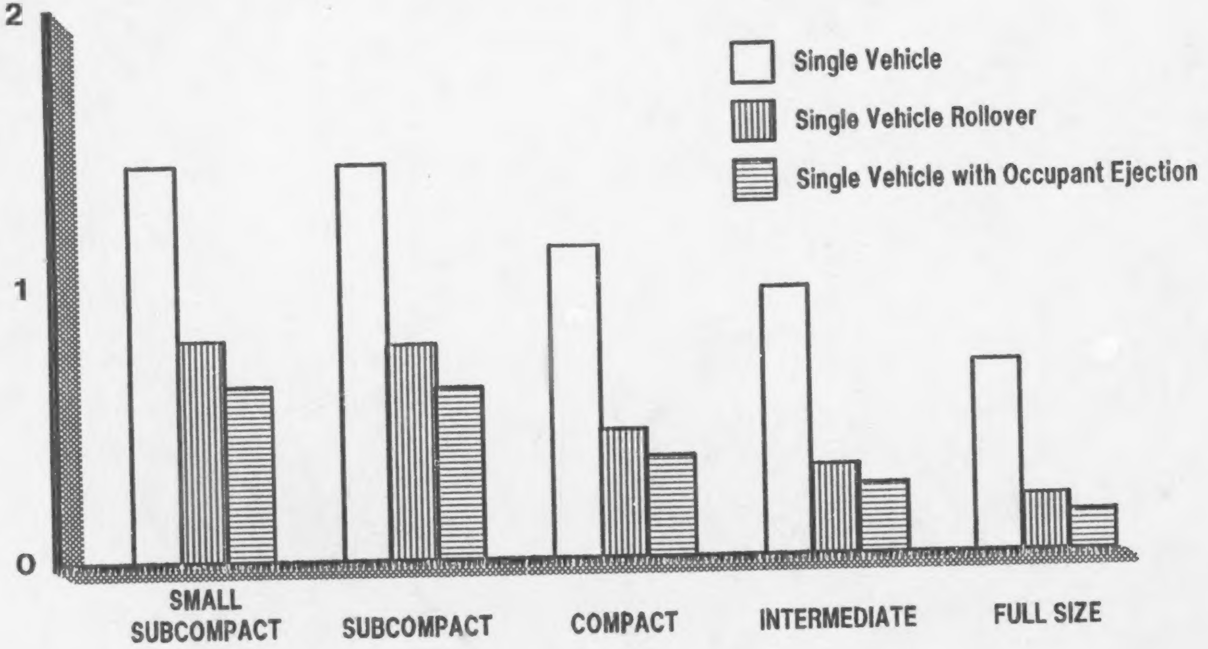
SLIDE 14

Dr. **Haddon**. The suggestion that a preponderance of youthful operators distorts the results by car size is further refuted by the next slide [slide 14], which shows by driver age the percentage of crash-involved drivers of cars of various sizes who sustain serious and fatal injuries.

In each of the age groups, the drivers of small subcompacts involved in crashes have a substantially higher chance of sustaining a serious or fatal injury than drivers of full-size cars. Thus, there is no convincing evidence that driver age differences account for the fact that small car occupants face substantially increased hazards. In other words, no matter what age group you look at, the experience gets progressively worse the smaller the car. I believe this definitively answers the point that was raised earlier this morning.

In virtually every crash configuration, the occupants of small cars fare worse than the occupants of large cars, everything else being equal.

Single Vehicle Crashes
Occupant Deaths per 10,000 Registered Cars
1-5 Year Old Models in 1978-1980



SLIDE 15

The next slide shows [slide 15], for example, that the number of occupants who are ejected from their cars during crashes because their vehicles' structures are inadequate to keep them contained is substantially higher in small cars than in larger cars. This finding has especially serious implications since ejection long has been known to be one of the most hazardous occurrences possible in a crash. The slide also shows that small cars involved in fatal crashes are far more likely than large cars to have rolled over.

What can be done to reduce the magnitude of the small car problem? The answer is not that we must return to the large and heavy car designs of the past. Car size, not car weight, is a critical parameter in terms of occupant protection. Since fuel economy is influenced much more by weight than by size, it should be possible to make cars that are of adequate size to protect their occupants, and that have respectable fuel economy as well, by increasing the use of lightweight material. I note that this is increasingly happening in car construction. In this regard, it is worth noting that many of the newer intermediate-size [1] cars have substantially better fuel economy than many of the smallest cars of only a few years ago.

There is little doubt that cars of the future will be smaller in general than many cars of the past. This means that more attention must be paid to designing cars so that they do a much better job of protecting their occupants in crashes. Much of the technology to do this has been available for many years and, in volume production, would not be expensive; yet it is not being provided to America's new car buyers even as optional equipment.

Even though no new car on the market today provides adequate state-of-the-art crash protection to the occupants inside, some of today's small cars are better designed than others. For example, domestically-produced small cars have on the average lower death and injury rates than Japanese-made models of similar size.

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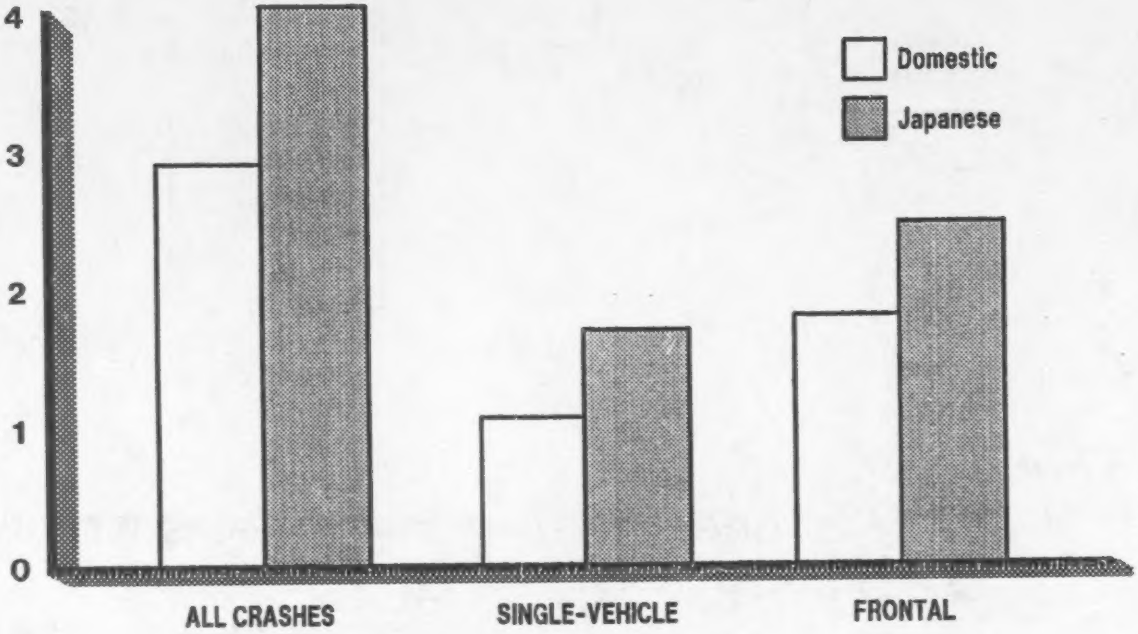
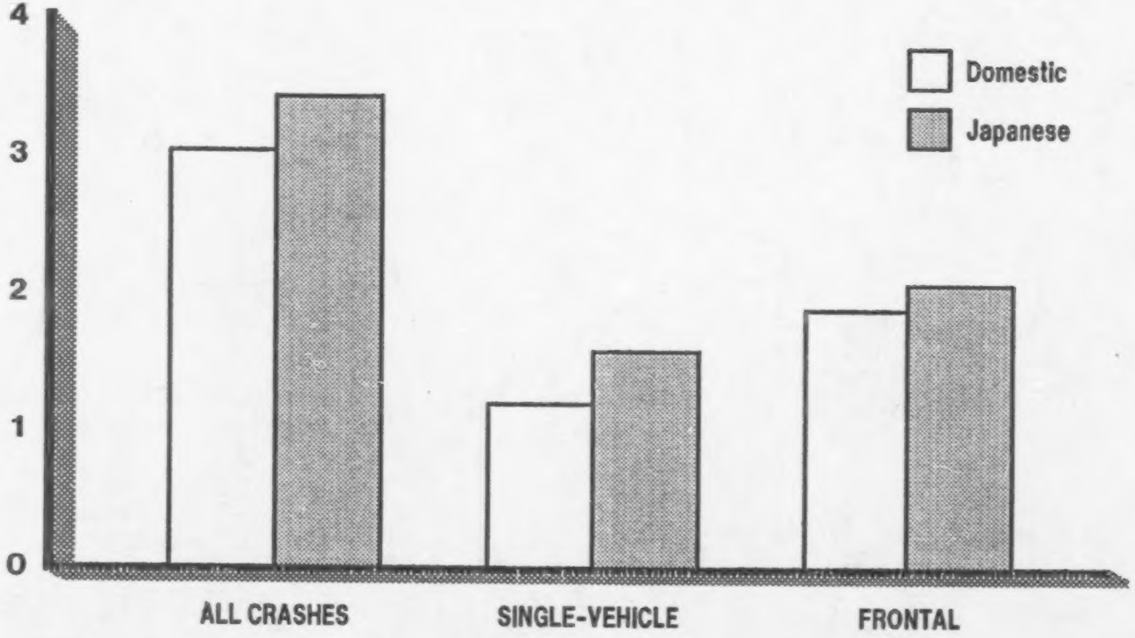
[1] Classified according to the Institute's objective size definitions based on wheelbase.

Japanese vs American
Occupant Deaths per 10,000 Registered Cars
1-5 Year Old Small Subcompacts in 1978-1980



SLIDE 16

Japanese vs American
Occupant Deaths per 10,000 Registered Cars
1-5 Year Old Subcompacts in 1978-1980



SLIDE 17

The next two slides [slides 16, 17] illustrate these differences in small subcompact and subcompact models.

Mr. GORE. These are deaths that occured in the United States, right?

Dr. HADDON. That is correct. These are national data.

We do not know all of the reasons for these differences, but the Federal Government's 35-mile-per-hour crash test program, begun with 1979 car models, provides clues for some makes and models.

In a moment, I will show you a video tape of the Government's crash tests of two popular Japanese-made small cars and a popular domestic small car. These are severe crashes at 35 miles per hour and the belted dummy occupants move rather violently. But note as you look at this video tape, in particular, that the steering columns in the 1980 Honda Civic and 1980 Toyota Corolla Tercel smash upward with great force into the dummies' faces, while the 1980 Chevrolet Chevette allows less violent movement to occur in the crash.

This tape is a poor tape. It is from the National Highway Traffic Safety Administration. Again, these are 1980 cars.

[Video tape shown.]

VIDEOTAPE SEGMENT NO. 1 — NHTSA NEW CAR ASSESSMENT PROGRAM; 35 MPH INTO BARRIER WITH INSTRUMENTED DRIVER AND PASSENGER DUMMIES

TOYOTA COROLLA TERCEL
HIC: 1218 driver/1179 passenger
CHEST: 48g driver/53g passenger

HONDA CIVIC
HIC: 2626 driver/1506 passenger
CHEST: 54g driver/47g passenger

CHEVROLET CHEVETTE
HIC: 668 driver/699 passenger
CHEST: 45g driver/40g passenger

PASS/FAIL Cutoff: HIC=1000, CHEST=60g

Dr. **Haddon**. Watch the steering wheel and watch what it does to the face of the dummy.

That, of course, is completely unnecessary design, and has been unnecessary design for decades.

Here is the 1980 Honda Civic. Again, watch the steering assembly. It smashes the dummy in the face.

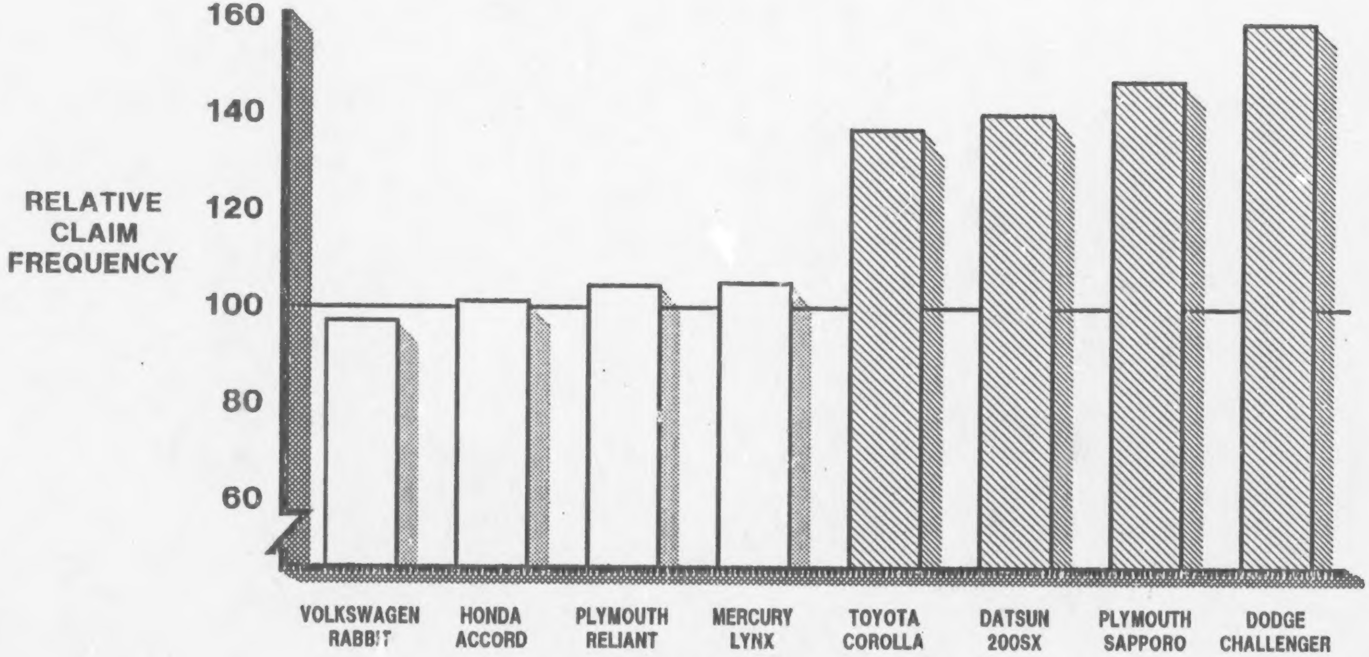
Here is the Chevette. You will see quite a contrast here where what I just showed you does not occur. Notice that although there is still a violent crash, the steering wheel does not go upward and smash the dummy's face. We believe that this sort of thing is probably one of the reasons why the Japanese cars in that period show up so badly in all of the available statistics.

An existing Federal standards limits the rearward movement of steering columns in test crashes. However, this standard, issued in 1967, has never been updated to address the question of vertical movement, even though such movement of steering columns obviously is hazardous—even lethal—to occupants of frontal crashes. In the case of the Chevrolet Chevette, the designers apparently developed a steering column that does not have the extensive vertical movement in crashes, whereas the designers of the Civic and Tercel we just saw paid insufficient attention to this important aspect of occupant protection.

I note that as a result of these tests, the 1981 Honda Civic steering column design was modified. In subsequent tests. this car performed much better than the 1980 model just shown. I note also that the agency has done nothing whatsoever that we are aware of that amounts to any final prohibition of such vertical movement.

Even among different makes and models in the same size group, insurance claims experience for medical costs resulting from injuries sustained by passenger car occupants varies considerably.

Personal Injury Protection Coverages
All Medical Claims
Best and Worst 1979-1981 Subcompact Two-Door Models



SLIDE 18

The next slide [slide 18] for example, shows the relative frequencies of first-party injury claims for the small subcompact two-door models with the best and worst experience. As a group, small two-door cars have worse claim frequency results than the average for cars of all sizes, shown as 100 on this slide. Some small cars, such as the Toyota Corolla, the Datsun 200SX, the Plymouth Sapporo, and the Dodge Challenger, have results that are between 38 percent and 60 percent worse than average. In sharp contrast, other cars, such as the Volkswagen Rabbit, Honda Accord, Plymouth Reliant, and Mercury Lynx, do substantially better.

One reason, incidentally, that the VW Rabbit performs better than other cars in its size group may be that many Rabbits are equipped with automatic seat belts. I know that seat belts of any type, if worn, reduce the chance of death and injury for passenger car occupants by about 50 percent. Unfortunately, at the present time in the United States, seat belts are worn by only about 10 percent of all occupants. A notable exception to this low usage pattern has been among occupants of VW Rabbits with automatic belts. Surveys have observed over 70 percent belt use in these cars.[1]

Effective occupant restraint is an important answer to much of the motor vehicle death and injury problem. Manual seat belts are not effective because they are rarely worn. It is for this reason that air bags and other kinds of automatic protection have been developed to protect occupants from injury in frontal crashes.

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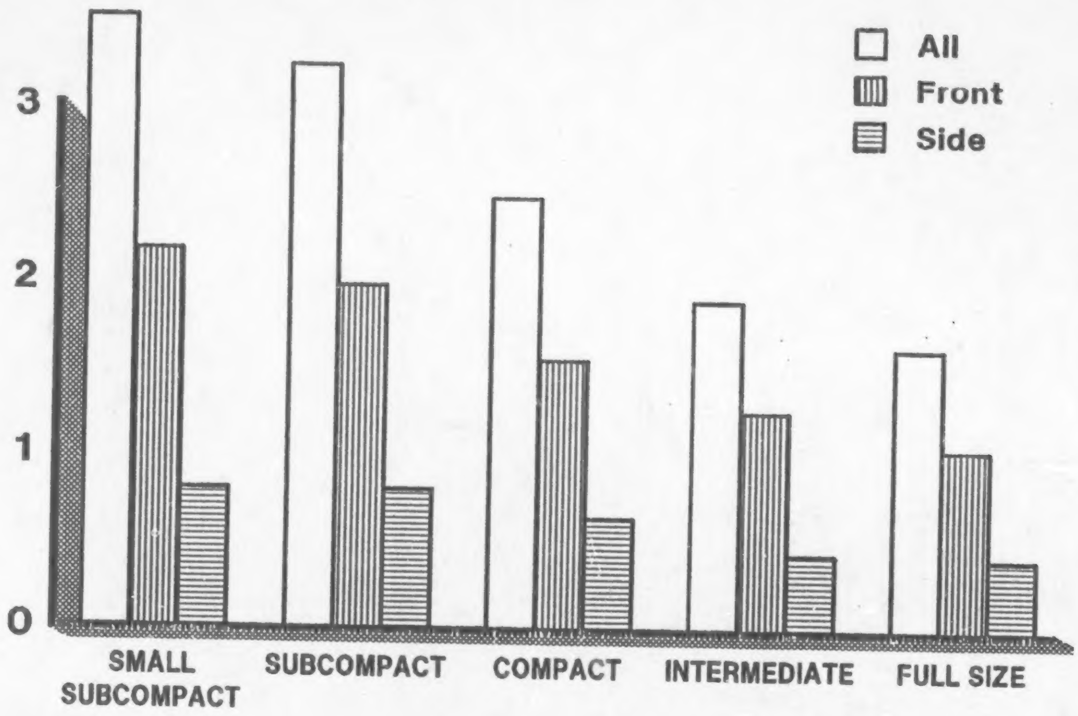
[1] On the average, seat belt use is higher in small cars than in larger cars. However, belt use in small cars is not high enough to offset the inherently greater hazards to the occupants of these cars in crashes.

Direction of Impact
Occupant Deaths per 10,000 Registered Cars
1-5 Year Old Models in 1978-1980



SLIDE 19

The next slide (slide 19) illustrates the critically important role of the frontal crash. This shows for frontal and side impacts the numbers of fatally injured occupants in cars of various sizes per 10,000 cars of each such size registered. The results show how important frontal impact protection is and how it becomes progressively even more important as cars get smaller. Tragically, for the tens of thousands of Americans who will be needlessly maimed and killed as a result, Federal requirements mandating automatic injury protection for frontal crashes were cancelled earlier this year. The responsible agency and others now are before the Supreme Court attempting to guarantee that these requirements will not be reinstated.

I would now like to show a brief piece of video footage of an air bag in a small car. The film, from work conducted under contract to the Federal Government many years ago, refutes claims sometimes made that small cars cannot be equipped with air bags.

[Video tape shown.]

VIDEOTAPE SEGMENT NO. 2 — MINICARS 1976 VEGA WITH AIR BAG; 30-MPH CRASH INTO BARRIER WITH PRE-CRASH, REAL TIME, HIGH-SPEED, AND POST-CRASH SHOTS. [INSTRUMENTED DUMMY CUSHIONED BY AIR BAG. HIC 353, CHEST 45g.]

Dr. **Haddon.** This technology, of course, was perfected in the late 1960's. It is being sold by Mercedes Benz for drivers in Europe, but it cannot be purchased in the United States.

I should point out that very recently the Honda Motor Co., unveiled an Accord equipped with an air bag system. This provides even further evidence that air bag technology can be adapted to small cars. This, of course, has been proven for many, many years by all sorts of various solid evidence.

In addition to air bags and automatic seat belts, there are many other technologies that are relatively inexpensive and that should be used on small cars to improve their ability to protect occupants in crashes. In the past, the Department of Transportation—particularly through its research safety vehicle RSV program which is now dormant—was in the forefront of efforts to develop an inexpensive and effective occupant protection technology and to show how such technology can be practically applied. The RSV program involved the development of small, attractive vehicles having good fuel economy, meeting emissions requirements, and providing substantially better crash protection than presently is available on any car in the marketplace. More importantly—and you mentioned this, Mr. Glickman, in your preparatory remarks—the technology incorporated in these cars is not expensive, and the cars themselves were intended to demonstrate practical improvements in occupant protection capabilities that could be easily adapted for small cars in the marketplace.

I would now like to show a 60-second public service announcement that was made some years ago by the Department of Transportation to publicize one of the cars developed in this program.

[Video tape shown.]

VIDEOTAPE SEGMENT NO. 3 — RESEARCH SAFETY VEHICLE PUBLIC SERVICE ANNOUNCEMENT, NARRATED BY LORNE GREENE:

> Introducing the revolutionary new RSV, the car of tomorrow, today. Designed for beauty and economy with outstanding gas mileage and a no-nonsense price tag. But what makes the RSV totally unique is its safety. Watch it bounce back from a wall with no damage. Now a 50-mile-an-hour crash. In a crash like that its air bags will save your life. The RSV has been attacked, crashed, smashed, and rolled. In each test, the drivers and passengers would have walked away. The RSV — stylish, easy to handle, economical, and absolutely the safest automobile ever created. But there's one slight catch: you can't buy it. Someday soon a car like the RSV could be a reality. To find out how, call 800-424-9393, anytime.

Mr. **Gore**. If I might interrupt you at that point to say that is one of the two cars that is going to be on display downstairs in the Rayburn Horseshoe. We are going to go down there right after the final witness testifies.

Thank you.

Dr. **Haddon**. That, of course, and very large amounts of solid evidence completely refutes that notion one hears in some quarters that one needs a so-called tank to do better with this problem.

Unfortunately, it appears—as I believe the committee is well aware—that the RSV program has been put on ice, and the research cars paid for with tax dollars now receive little, if any, publicity.

The Department of Transportation has predicted that the annual number of motor vehicle deaths—as you mentioned earlier—could increase to 70,000 in the 1990's, and that a big part of this increase would result from the increasing number of small cars. This country cannot afford to let this happen; the present situation is bad enough. It is imperative that the ability of cars—especially small cars—to protect their occupants in crashes be greatly updated. Better doors and door locks are needed to reduce the number of people ejected from small cars in crashes. Better energy-absorbing designs are needed to prevent passenger compartments from collapsing in on their occupants. And, in addition to automatic restraints such as air bags and automatic belts, better occupant protection features such as nonlacerating windshields and improved energy-absorbing steering columns are needed. If these and other improvements are not made, the realization of the Government's gruesome forecast of more than 70,000 motor vehicle deaths per year seems inevitable.

Mr. Chairman, I have also with me two short pieces of film which illustrate some of this technology, both with respect to air bags and nonlacerating windshields. At your pleasure, I would like to show at least one of these.

Mr. **Glickman**. How long are they? Our problem is that we are backing up in terms of our other witnesses.

Dr. **Haddon**. The one that shows the nonlacerating windshields and air bags, as well as ordinary belts in crashes, runs about 8½ or 9 minutes.

Mr. **Glickman**. I think probably, in the interest of time, we probably ought to forego that now. I think our staffs would like to see those films, and we would personally. We just don't have time now with these other witnesses.

Dr. **Haddon**. Fine. We would be glad to show them to you.

[The prepared statement of Dr. Haddon follows:]

statement of

William Haddon, Jr., M.D.
President
Insurance Institute For Highway Safety

before the
Subcommittees
on
Transportation, Aviation, and Materials
and
Investigations and Oversight
of the
Committee on Science and Technology
United States House of Representatives

November 30, 1982

The Insurance Institute for Highway Safety is an independent public service organization. It is a nonprofit, tax-exempt, scientific and educational organization dedicated to reducing the losses — death, injury, and property damage — resulting from crashes on the nation's highways. Supported directly or indirectly by companies writing most of the motor-vehicle insurance in the United States, the Institute conducts research involving a wide range of pre-crash, crash, and post-crash factors that contribute to the huge losses resulting from highway crashes.

I am appearing today in response to the request from the subcommittees for information concerning the hazards of small cars. My testimony will summarize Institute research findings that relate to this subject, and also address some of the basic misunderstandings about small-car hazards.

Since the energy crisis of 1973-1974 and the adoption of 55-mph speed limits, the number of persons fatally injured in the United States annually in motor-vehicle crashes has ranged between 47,000 and 52,000.* Just over half of these are occupants of passenger cars.

The first slide shows total numbers of motor-vehicle deaths together with numbers of passenger-car occupant deaths during 1975-1981 [slide 1]. Although total motor-vehicle deaths and passenger-car occupant deaths remained nearly constant during this period, the sizes of the cars involved in crashes with occupant deaths changed substantially. In particular, the number of deaths in large cars decreased while deaths in small cars increased.

What is meant by small cars? The next slide shows the vehicle size definitions used by the Institute [slide 2]. Because it is important to use objective definitions of car sizes in analyses of real-world crash experience, the Institute classifies cars into size groups according to wheelbase.** This slide shows some popular 1982 models classified according to the Institute's size definitions [slide 3].

If small cars are simply scaled-down versions of large cars — and this is the case for most small-car designs today — then the laws of physics dictate that the crash forces reaching the occupants of small cars are more severe than the forces reaching the occupants of larger cars, all other conditions being equal. This in turn must mean more frequent and more severe injuries for the occupants of small cars involved in crashes. (It also is important that vehicle occupants fare disproportionately worse the higher the crash speed and the smaller the car. This makes maintaining the 55-mph speed limit especially important as cars are made smaller.)

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* The death total in 1982 will be lower, probably about 45,000. Much of this decline can be attributed to the state of the economy, since it has been known for some time that the number of motor-vehicle deaths rises and falls with changes in the health of the economy. The reasons for this relationship are not fully understood.

** Using definitions based on wheelbase avoids the problems that arise when auto manufacturers' definitions are used. The latter definitions are primarily for marketing purposes and change as the automobile marketplace changes. For example, cars with wheelbases that some years ago were referred to by manufacturers as "intermediate" now are called "full-size" to reflect "downsizing".

As the next slide illustrates, the number of occupant deaths in full-size cars one to five years old fell dramatically during 1975-1981, while deaths in subcompacts and small subcompacts increased [slide 4]. In fact, the number of deaths each year increased for each of the three smallest car size groups. This increasing number of deaths in small cars is a reflection of two factors. One is that during the period 1975-1981 the number of small cars was increasing, while the number of full-size cars was decreasing. The second is that current small cars offer substantially less protection to their occupants in crashes than large cars. This latter effect has serious consequences for the number of passenger-car occupant deaths.

It has been repeatedly documented that occupants of small cars, *when they are in crashes*, have a much greater likelihood of sustaining serious or fatal injuries than do occupants of large cars. The next slide, based on police accident reports from the state of Maryland, illustrates this point [slide 5]. It shows that the percentage of drivers in small subcompact cars sustaining serious and fatal injuries in crashes is about double the percentage of drivers of full-size cars sustaining such injuries.

Results such as these, while generally not disputed, sometimes are questioned as possibly overstating the hazards to occupants of small cars. One belief frequently expressed is that because small cars are more maneuverable they are less likely than larger cars to be involved in crashes in the first place, and that this maneuverability offsets the disadvantages to small-car occupants when they are in crashes. There is no evidence to support this, and what evidence there is suggests that small cars actually are more rather than less often involved in crashes.

Information on the involvement of cars in crashes by size is limited, but some of the most persuasive evidence to be found is from insurance collision coverage loss experience — that is, from insurance covering crash damage to cars. The next slide shows the relative frequency of collision coverage claims by size of car for 1982 model two-door cars [slide 6]. Small two-door models have a higher frequency of claims than larger cars. The next slide shows similar results for 1982 four-door models [slide 7]. Again, there is a tendency for small cars to be involved much more frequently than large cars in crashes resulting in damage claims. The next slide shows the results for station wagons [slide 8]. Although small station wagons are not overinvolved in crashes, there is no indication that they are less frequently involved.

In looking at the crash-injury hazards associated with cars of different sizes, the Institute also has compared the number of occupants killed each year in cars of a particular size in relation to the number of cars of that size in use — that is, the number of deaths in cars of a particular size per 10,000 registered cars of that size. The next slide shows such results for cars that were one to five years old in calendar years 1978-1980 [slide 9]. There is a pronounced relationship between occupant deaths and car size, with small subcompacts having an occupant death rate more than double the rate for full-size cars. In other words, for every 10,000 small subcompacts registered, there are between three and four occupant deaths each year, compared with only about one and a half occupant deaths each year for every 10,000 full-size cars registered.

Police accident reports and fatal crash experience thus indicate the greater likelihood of death or injury to occupants of small cars. Analysis of insurance claims for medical costs resulting from injuries to passenger-car occupants yields a similar conclusion. This next slide shows the relative frequencies of injury claims made under first-party no-fault insurance for occupants of two-door models by size of car [slide 10].* There is a clear relationship between injury claim frequencies and size of car, with small subcompacts and subcompacts generating many more injury claims per insured car than the larger intermediate-size cars. The next slide shows similar results for four-door models [slide 11].

The results shown so far illustrate the increased risks to small-car occupants in crashes in general. Are these added risks due primarily to the disadvantage of colliding with larger cars? If all cars were the same size, would there be no increased risks associated with driving a small car? A simple way to find the answers to these often-raised questions is to compare the fatality and injury experience of occupants of cars of various sizes in single-vehicle crashes.

The next slide, based on police accident reports in Maryland, shows that a greater percentage of drivers of small cars, as compared to drivers of larger cars, sustains serious and fatal injuries in single-vehicle crashes — those in which the size of "the other car" plays no part since no other car is involved [slide 12]. Another slide shows the numbers of deaths in single-vehicle crashes in cars of particular sizes per 10,000 registered cars of that size [slide 13]. Again, the fatality rate in single-vehicle crashes is much higher in small cars than in large cars. As these data emphasize, the very serious disadvantages to the occupants of smaller cars would not disappear even if all cars on the road were small.

It also has been asked whether the poor performance of small cars somehow is due to their being more often driven by young people, who have a high likelihood of involvement in motor-vehicle crashes. Available data indicate this is not the case. The insurance injury claims results that you saw a moment ago are based on the same mix of youthful and non-youthful operators, and thus are adjusted to account for the fact that more young people drive small cars.

The suggestion that a preponderance of youthful operators distorts the results by car size is further refuted in the next slide, which shows by driver age the percentage of crash-involved drivers of cars of various sizes who sustain serious and fatal injuries [slide 14]. In each of the age groups, the drivers of small subcompacts involved in crashes have a substantially higher chance of sustaining a serious or fatal injury than drivers of full-size cars. Thus, there is no convincing evidence that driver age differences account for the fact that small-car occupants face substantially increased hazards.

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* The insurance injury and collision claims data referred to here and elsewhere in this statement are summarized, for most popular car models, in a Highway Loss Data Institute publication, "Injury and Collision Loss Experience."

In virtually every crash configuration, the occupants of small cars fare worse than the occupants of large cars, everything else being equal. The next slide shows, for example, that the number of occupants who are ejected from their cars during crashes because their vehicles' structures are inadequate to keep them contained is substantially higher in small cars than in larger cars [slide 15]. This finding has especially serious implications since ejection long has been known to be one of the most hazardous occurrences possible in a crash. The slide also shows that small cars involved in fatal crashes are far more likely than large cars to have rolled over.

What can be done to reduce the magnitude of the small-car problem? The answer is not that we must return to the large and heavy car designs of the past. Car *size* — not car *weight* — is a critical parameter in terms of occupant protection. Since fuel economy is influenced much more by weight than by size, it should be possible to make cars that are of adequate size to protect their occupants (and that have respectable fuel economy as well) by increasing the use of lightweight materials. In this regard, it is worth noting that many of the newer intermediate-size cars* have substantially better fuel economy than many of the smallest cars of only a few years ago.

There is little doubt that cars of the future will be smaller in general than many cars of the past. This means that more attention must be paid to designing cars so that they do a much better job of protecting their occupants in crashes. Much of the technology to do this has been available for many years and, in volume production, would not be expensive; yet it is not being provided to America's new-car buyers even as optional equipment.

Even though no new car on the market today provides adequate, state-of-the-art crash protection to the occupants inside, some of today's small cars are better designed than others. For example, domestically-produced small cars have, on the average, lower death and injury rates than Japanese-made models of similar size. The next two slides illustrate these differences in small subcompact and subcompact models [slides 16, 17]. We do not know all of the reasons for these differences, but the federal government's 35-mph crash test program (begun with 1979 car models) provides clues for some makes and models. Here is a videotape of the government's crash tests of two popular Japanese-made small cars and a popular domestic small car. These are severe crashes at 35 mph and the belted dummy occupants move rather violently, but note in particular that the steering columns in the 1980 Honda Civic and 1980 Toyota Corolla Tercel smash upward with great force into the dummies' faces, while in the 1980 Chevrolet Chevette less violent movement occurs.

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* classified according to the Institute's objective size definitions based on wheelbase

VIDEOTAPE SEGMENT NO. 1 - NHTSA NEW CAR ASSESSMENT PROGRAM; 35 MPH INTO BARRIER WITH INSTRUMENTED DRIVER AND PASSENGER DUMMIES

TOYOTA COROLLA TERCEL
HIC: 1218 driver/1179 passenger
CHEST: 48 driver/53 passenger
HLDI relative claim frequency: 153

HONDA CIVIC
HIC: 2626 driver/1506 passenger
CHEST: 54 driver/47 passenger
HLDI relative claim frequency: 135

CHEVROLET CHEVETTE
HIC: 668 driver/699 passenger
CHEST: 45 driver/40 passenger
HLDI relative claim frequency: 119

PASS/FAIL Cutoff: HIC = 1000
CHEST = 60

An existing federal standard limits the rearward movement of steering columns in test crashes. However, this standard, issued in 1967, has never been updated to address the question of vertical movement, even though such movement of steering columns obviously is hazardous — even lethal — to occupants in frontal crashes. In the case of the Chevrolet Chevette, the designers apparently developed a steering column that does not have extensive vertical movement in crashes, whereas the designers of the Civic and Tercel we just saw paid insufficient attention to this aspect of occupant protection. (As a result of these tests, the 1981 Honda Civic steering column design was modified; in subsequent tests, this car performed much better than the 1980 model just shown.)

Even among different makes and models in the same size group, insurance claims experience for medical costs resulting from injuries sustained by passenger-car occupants varies considerably. The next slide, for example, shows the relative frequencies of first-party injury claims for the small subcompact two-door models with the best and worst experience [slide 18]. As a group, small subcompact two-door cars have worse claim frequency results than the average for cars of all sizes. Some cars in this group — such as the Toyota Corolla, the Datsun 200SX, the Plymouth Sapporo, and the Dodge Challenger — have results that are between 38 percent and 60 percent worse than average. In sharp contrast, other cars such as the Volkswagen Rabbit, Honda Accord, Plymouth Reliant, and Mercury Lynx, do substantially better.

One reason the Volkswagen Rabbit performs better than other cars in its size group may be that many Rabbits are equipped with automatic seat belts. Seat belts, if worn, reduce the chance of death and injury for passenger-car occupants by about 50 percent. Unfortunately, at the present time in the United States seat belts are worn by only about 10 percent of all occupants. A notable exception to this low usage pattern has been among occupants of Volkswagen Rabbits with automatic belts; surveys have observed over 70 percent belt use in these cars.*

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* On the average, seat belt use is higher in small cars than in larger cars. However, belt use in small cars is not high enough to offset the inherently greater hazards to the occupants of these cars in crashes.

Effective occupant restraint is an important answer to much of the motor-vehicle death and injury problem. Manual seat belts are not effective because they rarely are worn. It is for this reason that air bags and other kinds of automatic protection have been developed to protect occupants from injury in frontal crashes.

The next slide illustrates the critically important role of the frontal crash [slide 19]. This shows, for frontal and side impacts, the numbers of fatally injured occupants in cars of various sizes per 10,000 cars of each such size registered. The results show how important frontal impact protection is, and how it becomes progressively even more important as cars get smaller. Tragically, for the tens of thousands of Americans who will be needlessly maimed and killed, federal requirements mandating automatic injury protection for frontal crashes were cancelled earlier this year. The responsible agency and others now are before the Supreme Court attempting to guarantee that these requirements will not be reinstated.

I would now like to show a brief piece of video footage of an air bag in a small car. The film, from work conducted under contract to the federal government many years ago, refutes claims sometimes made that small cars cannot be equipped with air bags.

VIDEOTAPE SEGMENT NO. 2 - MINICARS 1976 VEGA WITH AIR BAG; 30-MPH CRASH INTO BARRIER WITH PRE-CRASH, REAL TIME, HIGH-SPEED, AND POST-CRASH SHOTS.

I should point out that very recently the Honda Motor Company unveiled an Accord equipped with an air bag system. This provides even further evidence that air bag technology can be adapted to small cars.

In addition to air bags and automatic seat belts, there are many other technologies that are relatively inexpensive and that should be used on small cars to improve their ability to protect occupants in crashes. In the past, the Department of Transportation — particularly through its Research Safety Vehicle (RSV) program, which now is dormant — was in the forefront of efforts to develop inexpensive and effective occupant-protection technology and to show how such technology can be practically applied. The RSV program involved the development of small, attractive vehicles having good fuel economy, meeting emissions requirements, and providing substantially better crash protection than presently is available on any car in the marketplace. Most importantly, the technology incorporated in these cars is not expensive, and the cars themselves were intended to demonstrate practical improvements in the occupant protection capabilities that easily could be adapted for small cars in the marketplace. I would like to show a 60-second public service announcement that was made some years ago by the Department of Transportation to publicize one of the cars developed in this program.

VIDEOTAPE SEGMENT NO. 3 - RESEARCH SAFETY VEHICLE PUBLIC SERVICE ANNOUNCEMENT, NARRATED BY LORNE GREENE:

Introducing the revolutionary new RSV, the car of tomorrow, today. Designed for beauty and economy with outstanding gas mileage and a no-nonsense price tag. But what makes the RSV totally unique is its safety. Watch it bounce back from a wall

> with no damage. Now a 50-mile-an-hour crash. In a crash like that its air bags will save your life. The RSV has been attacked, crashed, smashed, and rolled. In each test, the drivers and passengers would have walked away. The RSV — stylish, easy to handle, economical, and absolutely the safest automobile ever created. But there's one slight catch: you can't buy it. Someday soon a car like the RSV could be a reality. To find out how, call 800-424-9393, anytime.

Unfortunately, it appears that the RSV program has been put on ice, and the research cars paid for with tax dollars now receive little, if any, publicity.

The Department of Transportation has predicted that the annual number of motor-vehicle deaths could increase to 70,000 in the 1990's, and that a big part of this increase would result from the increasing number of small cars. This country cannot afford to let this happen; the present situation is bad enough. It is imperative that the ability of cars — especially small cars — to protect their occupants in crashes be upgraded. Better doors and door locks are needed to reduce the number of people ejected from small cars in crashes. Better energy-absorbing designs are needed to prevent passenger compartments from collapsing in on occupants. And, in addition to automatic restraints such as air bags and automatic belts, better occupant-protection features such as non-lacerating windshields and improved energy-absorbing steering columns are needed. If these and other improvements are not made, the realization of the government's gruesome forecast of more than 70,000 motor-vehicle deaths per year seems inevitable.

Note: Copies of the slides used in this statement will be available on or after December 2, 1982, from the Communications Department, Insurance Institute for Highway Safety, Watergate 600, Washington, D.C. 20037, 202/333-0770.

Mr. GLICKMAN. Let me just ask a couple of questions. We have a couple of additional members that have come in.

I would like you to, if possible, summarize your feelings about the National Highway Traffic Safety Administration and the Government's role vis-a-vis auto safety programs under this administration or under the previous one.

Dr. HADDON. This area is one of those—and there are so many others in our society today—in which the issues are far too technical to expect the average purchaser to be informed, knowledgeable, or even to have sufficient background to be able to judge the issues, even if the information were available to him.

Someone going to a dealer's showroom, for example, has absolutely no way to determine whether the car that he is looking at is designed so that it will protect him in a crash as much as possible or whether it is merely showy and looks good. We have the same problem, of course, in such areas as pharmaceuticals where there is no way for the average purchaser to tell whether or not the dosage is right or the product is contaminated or whatever. Of course, there are many other examples.

It seems to me, therefore, that lacking leadership on the part of those that produce vehicles, whether domestic or foreign, that it behooves us through our Government to make sure not only that that information is available, but also that at least minimum standards for such aspects of the vehicle are set. That, of course, was the purpose of the National Traffic and Motor Vehicle Safety Act of 1966 which told the Department of Transportation—what became the Department of Transportation—to set such minimum standards so that the manufacturers would all start from the same baseline and so that they could compete beyond that baseline in protecting people and providing cars that were satisfactory in other relevant respects.

That competition may be beginning. There are some signs of this. But certainly it is decades behind where it should have been at this point.

Mr. GLICKMAN. And the Government's failure to implement or enforce that 1966 act during the last couple of years, do you think that has retarded that competition?

Dr. HADDON. I don't think that there is any question that the policy direction of the Department of Transportation and of the National Highway Traffic Safety Administration, which were so directed by Congress, has been completely reversed in recent months.

Mr. GLICKMAN. Do you think if that reversal were allowed to continue, we would see an acceleration of highway fatalities over the next 10 years?

Dr. HADDON. Let's put it this way: We certainly won't see the reductions that we had every reason to expect.

Mr. GLICKMAN. Thank you.

Mr. Gore.

Mr. GORE. I want to tell you that your testimony has been very excellent. I am asking fewer questions primarily because of the time and the other witnesses.

Dr. HADDON. Thank you.

Mr. GORE. Thank you very much. I also enjoyed your testimony. I will hold my questions short.

The auto manufacturers are going to state later in this hearing that fatalities and severe injuries are very much influenced by the age of the driver. You dispute this, and the data you showed in slide form disputes it. How do we sort out that disagreement? Is their objection valid there?

Dr. **Haddon**. I think their objection is very self-serving.

But even if they were right—and we do not believe they are right—but even if they were right, you would think that they would particularly go out of their way to protect those more often involved in crashes, young people, particularly since they have their own lives otherwise ahead of them, lives which they would like to live and not spend in wheelchairs or horribly lacerated.

Let me quickly give you an analogy. If you were a manufacturer shipping products by whatever means, parcel post or otherwise, and you knew that in some hands those products had a higher breakage rate, that their packages didn't properly protect, you would go out of your way in reasonableness to make sure that, for those shipments, at least, the packages were adequate to protect. Yet, we are asked to, I think tragically, to accept exactly the reverse argument when it comes to protecting people. In other words: "Oh, well, they are young people and they are going to die anyway because of their behavior. Let's not go out of our way to especially protect them." I think that is a bizarrely tragic argument and one which is not worthy of its sources.

Mr. **Gore**. Looking overall at the performance of this agency that we referred to as NHTSA in the past 2 years, do you think that what has been happening over there is good, excellent, bad, terrible? How would you describe it overall?

Dr. **Haddon**. I think that, judging from the deaths and injuries and cripplings to which it is inevitably leading, it is a mixed bag. They are doing some things they should be doing. But I think that in this vehicle area, no term short of "disastrous" would apply.

Mr. **Gore**. Disastrous. You represent not public interest consumer groups, but large corporations, insurance companies.

Dr. **Haddon**. No; we are a public service group. We do not represent insurance companies. They support us in the same way that various people would support private foundations that are public service organizations.

Mr. **Gore**. And the insurance industry provides the funding for your group?

Dr. **Haddon**. Entirely.

Mr. **Gore**. Are you familiar with what the Japanese automakers are doing in this area?

Dr. **Haddon**. To an extent. I referred in my testimony, as you recall, to the fact that Honda has just shown an air bag-equipped car, which is clearly a signal that they are ready to sell those at some time in the future.

Mr. **Gore**. Do insurance rates now commonly reflect this trend that your data reflects?

Dr. **Haddon**. Again, we are not in the insurance business, and you would have to ask insurance interests. But I believe that is increasingly the case. In fact, when air bag-equipped cars were available to an exent in the United States—and I note in passing that the Wall Street Journal in 1976 documented the suppression of air bag sales by one manufacturer, despite claims to the contrary—but when those cars were entering the market, many large insurance companies gave, for example, 30-percent discounts on relevant injury coverages because they had to pay out fewer dollars for the injuries in those cars.

Mr. **Gore**. Let me ask you one final question, and then maybe follow it up. You have described NHTSA's actions in this field as a disaster over the last 2 years. You are an expert in this area, and you have spent a lot of time looking at this problem. What do you think about the job they are doing?

Dr. **Haddon**. It seems to me that you should ask them that question.

Mr. **Gore**. I hope to. We have two subcommittees of the Congress reflecting the interests of a great many people in the United States of America coming here together today for a full day's hearing, to ask witnesses from all sectors of society to come and address this problem. I had been looking forward to asking that question to the Administrator of NHTSA. But I was just informed that he was evidently backing out at the last minute, deciding not to come to this hearing. If that is in fact the case, I think it is insulting to these two subcommittees, to the people of this country, and I would urge staff members who are present to get him on the telephone and tell him we are having a very interesting, productive hearing here. A lot of questions are coming up that he really ought to be present to answer. Please urge him by telephone to change his mind and comply with what his original intentions were and come to the hearing after all.

I have no further questions.

Mr. **Glickman**. I might mention for the record that we gave Mr. Peck the opportunity to appear at any time today that he wanted to, morning, noon, night, so there is no feeling that the structure of this hearing was set up so as to preclude his appearance.

I think Mr. Volkmer was here next.

Mr. **Volkmer**. Dr. Haddon, do you have an estimate as to the approximate increase in costs that may be necessary to make the small car more safe, if we add a lot of the features that you talk about in your testimony?

Dr. **Haddon**. It depends on the feature and, of course, it depends on who you listen to, and whether those features are built in from the original design of the car or expensively added on after the fact. There is testimony before another congressional committee, for example, from U.S. corporations that would like to supply air bag systems to the manufacturers. We would be happy to submit that for the record. There is also some evidence with respect to the so-called antilacerate windshields, which have been available and used on tens of thousands of cars in Europe, including, for example, the top of the Peugeot line, for up to 5 or 6 years. That is on the film that we haven't time to show, the performance of such windshields.

[Material referred to follows]:

87

AUTOMATIC CRASH PROTECTION STANDARDS

HEARINGS

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS, CONSUMER PROTECTION, AND FINANCE

OF THE

COMMITTEE ON ENERGY AND COMMERCE HOUSE OF REPRESENTATIVES

NINETY-SEVENTH CONGRESS

FIRST SESSION

ON

H.R. 3151

A BILL TO AMEND THE NATIONAL TRAFFIC AND MOTOR VEHICLE SAFETY ACT OF 1966 TO PROVIDE FOR THE EQUAL APPLICATION OF ANY AUTOMATIC OCCUPANT RESTRAINT STANDARD TO ALL MANUFACTURERS OF PASSENGER CARS ON THE SAME EFFECTIVE DATE

H.R. 3184

A BILL TO AMEND THE NATIONAL TRAFFIC AND MOTOR VEHICLE SAFETY ACT OF 1966 TO PROHIBIT THE SECRETARY OF TRANSPORTATION FROM REQUIRING MOTOR VEHICLE MANUFACTURERS TO INSTALL AUTOMATIC OCCUPANT RESTRAINT PROTECTION SYSTEMS IN MOTOR VEHICLES

H.R. 3237

A BILL TO AMEND THE NATIONAL TRAFFIC AND MOTOR VEHICLE SAFETY ACT OF 1966 TO DIRECT THE SECRETARY OF TRANSPORTATION TO REQUIRE CERTAIN CAR MANUFACTURERS TO INSTALL PASSIVE OCCUPANT RESTRAINT SYSTEMS IN CERTAIN NEW PASSENGER CARS

APRIL 27 AND 30, 1981

Serial No. 97-10

Printed for the use of the
Committee on Energy and Commerce

U.S. GOVERNMENT PRINTING OFFICE
80-956 O WASHINGTON : 1981

Mr. WIRTH. Thank you very much.

Mr. Rockow.

STATEMENT OF RALPH ROCKOW

Mr. ROCKOW. Thank you, Mr. Chairman.

As I sat here and listened to the speakers before me, I am in quite a dilemma. It is almost a good news and bad news story. That is, if we are going to be counting on 100,000 automobiles with airbags a year, I divide that by three manufacturers, and that gives me about 33,000 vehicles. I know exactly what the board of directors are going to tell me about this business opportunity when I get home. That is the bad news.

The good news, is that I would like to have somebody go into the airbag business because I would like to have some of that $3,300 action I heard about for replacing airbag systems.

Mr. WIRTH. You do not think that $3,300 figure is accurate?

Mr. ROCKOW. I would be happy to resign today and start an airbag replacement business if that is anywhere near the replacement cost.

Seriously, though, the ratio bandied around is 2½ times original equipment price and I have no reason to disbelieve the ratio. That is the, auto industry's number. However, I am sure that $1,100 is an unrealistic price for airbag replacement parts.

I appear before you today representing two organizations. First, I am vice president of Talley Industries, Inc., of Mesa, Ariz. Talley is a New York Stock Exchange company which has adapted high-technology aerospace research and manufacturing capability to the field of automotive safety equipment, particularly airbag restraints.

Second, I am chairman of the Automotive Occupant Protection Association, a group of companies—including the manufacturers of airbag systems—dedicated to preventing deaths and injuries through the development of improved occupant restraint systems and the education of the public to the benefits of these systems.

Under the provisions of the Motor Vehicle Safety Act, the Department of Transportation has promulgated Federal motor vehicle safety standard 208 requiring that front seat auto occupants be protected, without any action on their part, in frontal crashes of 30 miles per hour. We fully support that standard.

Approximately 50,000 Americans die each year on our Nation's highways. Hundreds of thousands more suffer injuries of varying severity. It is a fact that many of these deaths and injuries could be prevented if autos were equipped with automatic occupant restraints--restraints which protect, regardless of whether the occupant chooses to buckle a belt or take any other precautions.

As an engineer and as an officer of a company which has spent millions of dollars and thousands of man hours developing automatic restraint systems, I can tell you that these devices are ready today to be installed on automobiles.

As with any other new device, automatic restraints—airbags—have had developmental problems. Extensive design and testing have resolved these problems which surfaced in the early years of development. Such problems arise in any new program, be it the development of airbags or airplanes, automobiles or space vehicles:

A problem arises and a solution is found. I am confident we have solved the technical problems of airbags. Indeed, millions of miles of tests and actual on-the-road experience verify this. I might add that I managed the qualification test program for the lunar module descent engine that safely landed our astronauts on the lunar surface and we didn't test that system to the extent we have tested automotive airbags. Airbags are effective and reliable. The irony of the situation is that airbags are also unavailable to the consumer.

The cost of equipping autos with automatic restraints is small when compared with the savings which would result from the prevention of thousands of deaths and injuries each year. These savings include a reduction in the cost of rescue services, medical and hospital care, payments to families of fatalities, insurance claims, and the incalculable cost of pain and suffering. Our society would benefit from the savings of literally billions of dollars if fewer Americans were victims of traffic accidents.

Much of the required developmental costs for automatic restraints has already been invested by the major auto manufacturers. In fact, airbag suppliers have received orders from the industry to tool for, and be ready to produce systems for some 1982 models, as required by the standard. These orders, however, have been canceled or delayed, possibly in anticipation of Government action to remove so-called excessive regulation.

While it is true there are some regulations which impact unfavorably on our citizens, it is tragic that our Government would rescind or weaken a standard that has so much potential for good.

We recognize the dire economic straits of the domestic auto industry and we support efforts to strengthen the industry and return it to the forefront of world economic leadership. But we firmly reject the notion that the reason for the industry's plight is a safety standard which would protect America's citizens from needless death and injury. The rescission or weakening of Standard 208 will not save or provide an advantage for the domestic auto industry.

Much has been said about the cost of airbags to the consumer. While low production volumes would result in a higher cost, we expect airbags produced in high volume to cost the consumer a maximum of $250 to $300 per vehicle, about the same as a stereo radio or knit-cloth seat covers. Surveys have shown the consumer wants, and will pay more for, safer cars. And the optional airbag should be available for this consumer.

As automobiles are downsized, they become less safe. Consequently, the need for automatic restraints becomes even greater with the smaller vehicle. Standard 208 would insure that the occupant of a small car—or any car—would be protected.

Standard 208 affects the imported vehicle as well as the American-made car. Foreign manufacturers whose cars are perceived to be less safe may very well equip their cars with airbags and use their improved safety characteristics as a marketing advantage, much as they used fuel economy and quality in the last few years. I can assure you that at the present time, foreign manufacturers' activity in the development of airbags exceeds that of our domestic industry. This tragic irony may require consumers who want safer cars to buy American-developed airbags from foreign manufacturers.

The airbag suppliers have developed effective systems in anticipation of Standard 208, even though there has been continuing uncertainty and controversy surrounding this issue. The suppliers are ready to start their production lines to make airbags available. Now, however, the future of the standard and the suppliers are facing a tough economic decision: Should they continue their program or should they turn their efforts toward a more stable business objective? Continued uncertainty makes their commitment appear more and more unfeasible. And the American consumer would be the ultimate victim.

I might point out that our company is very heavily engaged in aerospace production, very much involved in the military, new weapons systems designs, and frankly, our R. & D. funds are running very, very thin. We continue to weigh this and point this out to our board of directors.

Obviously, if the airbag goes and is successful, those of us who have been very close to it, we would have a very fine investment in the future building airbags. However, that has got to come around very soon, and we cannot be talking about the long run as we are talking about it now.

In our comments on Secretary Lewis' proposal to delay the implementation of Standard 208 for 1 year, we recognized the need to provide some relief to the domestic auto industry. We also agreed to support a move to reverse the order of implementation of the standard to require compliance by small cars earlier than is now scheduled. We asked, however, for a commitment by DOT to require the availability of airbags on some models to justify our continued participation in this program. Without such assurance, it is likely that airbag technology would be lost.

Our position remains unchanged: We can support reasonable modification of the standard, but we must have some commitment for optional airbags. We need this commitment to safety—and so do all Americans.

Thank you.

Mr. WIRTH. Thank you very much, Mr. Rockow.

The only message I can suggest you take back to your board is to hang on and try to keep in business.

Mr. Pulley?

Dr. HADDON. In that case, I believe that the increment per windshield is in the vicinity of $25. Although I note from replacement data that Peugeot is, I believe, charging only a differential of $3, which sounds a bit low, for that windshield as opposed to one that is not antilacerative.

What is happening in this field—in some respects, but not all—is that some of the cutting edge of technology in this field is moving overseas. The Honda air bag-equipped car may be an indication of that. The antilacerative windshield, developed by a French-German, huge, high-technology glass company, is another example.

I personally think that the Department of Transportation, in its clear attempts to aid a seriously ailing domestic industry by cutting back on all sorts of standards and even eliminating standards, is doing them a huge disservice because it is taking off the pressure to be technologically competitive, and that technological competitiveness is clearly not being dropped by some of their overseas competitors. So I think that there are larger issues here than merely the crucial one of the people that are getting chewed up as a result.

Mr. VOLKMER. I have no further questions, Mr. Chairman.

Mr. GLICKMAN. Thank you.

Mr. Dunn.

Mr. DUNN. I have no questions, Mr. Chairman.

Mr. GLICKMAN. Thank you very much, Dr. Haddon. We appreciate it.

Dr. HADDON. You are very welcome.

Mr. GLICKMAN. Our next witness is Joan Claybrook, president of Public Citizen.

Mr. GORE. Ms. Claybrook, I would like to extend a welcome to you on behalf of both subcommittees. Without objection, your prepared text will go into the record at this point.

Without objection, I think it would be appropriate to include into the record as well the full text of the report which you and your group have compiled on this subject. It is entitled "Reagan on the Road: The Crash of the U.S. Auto Safety Program."

[The report follows:]

REAGAN ON THE ROAD:
THE CRASH OF THE U.S. AUTO SAFETY PROGRAM

September 1982

Joan Claybrook
Jacqueline Gillan
Anne Strainchamps

Public Citizen

Washington, D.C.

1982 by Public Citizen.

TABLE OF CONTENTS

		Page
	Introduction and Summary	
1.	MOTOR VEHICLE SAFETY STANDARDS	1
2.	SAFETY BELTS	29
3.	MOTORCYCLES	40
4.	55 MPH SPEED LIMIT	45
5.	PUBLIC INFORMATION	51
6.	SAFETY ENFORCEMENT AND DEFECTS INVESTIGATION	61
7.	BRAIN DRAIN	66
	Footnotes	73

INTRODUCTION

The National Traffic and Motor Vehicle Safety Act was enacted by Congress in 1966 to reduce accidents, deaths and injuries resulting from traffic accidents. To carry out these responsibilities, Congress directed the federal government to establish motor vehicle safety standards to improve the crashworthiness of vehicles, to fund state highway safety programs, and to educate the public about the safety aspects of vehicles. This report is an examination of the performance of the National Highway Safety Administration (NHTSA) of the U.S. Department of Transportation under the Reagan Administration in carrying out its 1966 statutory mandate.

Why should the public care about the actions of this government agency? Because auto crashes are one of this Nation's leading public health problems. They are the primary cause of death for all Americans under the age of 35. Each year there are more than four million injuries and 51,000 deaths caused by auto accidents at a cost of over $50 billion to society. They are the leading cause of paraplegia, quadraplegia, facial injuries, and a major cause of epilepsy.

Since January 20, 1981, NHTSA has undergone a dramatic change in policy and direction. The result is a systematic dismantling of safety programs in direct conflict with NHTSA's statutory mission to protect the driving public. This report describes how the Reagan Administration is deliberately crippling this important public health agency. Motivated by ideology and contemptuous of scientific facts, the administration has openly attacked or covertly neglected three major life-saving programs under the agency's aegis: motor vehicle safety standards, motorcycle safety, and the 55 mile per hour speed limit. Each of these programs has been scientifically shown to save thousands of lives and mitigate hundreds of thousands of injuries each year.

Since 1968, vehicle safety standards have saved the lives of an estimated 80,000 Americans. The research and testing sponsored by the NHTSA have led to invaluable safety design improvements in motor vehicles that would otherwise never be made. The automatic restraint standard revoked by the Reagan Administration would have saved an estimated 9,000 lives each year and reduced the injuries of thousands more. Improved side impact and pedestrian protection, two other rulemakings scuttled by the administration, would additionally save thousands of lives and injuries, contributing to the well-being of thousands of families in America. Tragically, this administration is more willing to innoculate people than their cars against catastrophic health consequences.

The 55 mph speed limit, which has saved 4,000-5,000 lives per year since its enactment in 1974, is a proven life saving measure. Yet the administration that in other forums prides itself on being "pro-life" has refused to give strong and steady support to the 55 mph limit. Despite this neglect, the public continues to strongly support this law.

The motorcycle helmet laws enacted by states, which once saved the lives of so many of our youth, have simply been ignored by NHTSA. Research support for them has been discontinued. Following the revocation of their helmet laws by 28 states since 1976 (when Congress removed the grant-in-aid penalty for failure to have a law), there has been a 50% increase in motorcycle fatalities. Nationwide, the toll is now about 1,500 more each year than in 1976.

At a deeper level, beyond these three key programs, the administration has inflicted lasting institutional damage on this young Federal agency. The scientific and engineering expertise of the NHTSA has been seriously weakened, demoralized, and misdirected. Internal reorganizations and re-assignments have resulted in the loss of more than 200 NHTSA staff, a quarter of its workforce. The agency no longer conducts its work in an open, accessible manner, as befits a federal agency in a democracy. Instead it has pulled a veil of secrecy over its enforcement actions, defect investigations, technical and data files, and communications with the auto industry -- a process that keeps the public out and the corporate procrastinators in. Delays in carrying out the law have become legion. Two annual reports to the Congress, a statutory requirement, are months overdue (due July 1, 1981 and July 1, 1982).

Publications have been recalled with an energy not applied to the recall of dangerous cars. Citizen access to agency materials, films, reports, brochures, and library materials have become much costlier, more difficult, or flatly impossible. The Research Safety Vehicle technology which toured the nation to rave reviews in years past is locked up in the DOT basement and is unavailable to the media and the American people.

In the process of identifying the scientific initiatives that have been buried and their public relations substitutes, discussion of drunk driving was omitted from this report. In the mid-1970's, the Alcohol Safety Action Projects throughout the country were funded with $88 million dollars of support but did not show significant reductions in this problem. However, we now know that two-thirds of the drivers arrested for drunk driving are more than social drinkers, and about half of the drunk driving fatalities are suffered by the drinking driver.

Only recently has the public and the Congress become aroused and the media focused on this issue. While the general consciousness about this problem has been raised, it remains to be seen whether or not the Administration will make the tough decisions and fund payoff measures such as alcoholic rehabilitation programs, a uniform drinking age at 21, alternative community service sentences that will result in behavioral changes, and tough highway and dram shop laws enforcement (taking away the licenses of bar owners who serve someone who is drunk).

This program certainly warrants continued scrutiny and evaluation.

The power to save lives and prevent trauma to millions of Americans is surely one of the most honorable professional aspirations. Yet President Reagan and his appointees at the highest levels have made clear their scorn for auto safety standards, and especially the automatic crash protection standard. Within their respective spheres of authority, Vice President George Bush, OMB Director David Stockman, Secretary of Transportation Drew Lewis, and NHTSA Administrator Raymond Peck are committed to dismantling the nation's auto and highway safety program.

Everyday 140 Americans are killed in traffic accidents, the equivalent of a major airline crash 365 days a year. The recent plane crash in New Orleans was the second worse disaster in the U.S. history, and yet this many Americans die everyday on the nation's highways. Can we sit back and let the Reagan Administration shelve the technological vaccines such as air bags, crash resistent structures and forgiving exteriors of cars, available to save lives and mitigate injuries? Would we let political leaders stop all cancer research because they were philosophically uncomfortable with the government's role?

It is time to call a halt to the destruction of people and place our priority back on saving lives. And it's time for General Motors, Ford, Toyota and Nissan to recognize that what's good for their customers and other highway users might just be good for them.

SUMMARY

The National Highway Traffic Safety Administration (NHTSA) is a vital public health agency. Its work is mandated by congressional statutes and based on scientific research and technological innovation. Yet in the past 19 months, under the Reagan Administration, the NHTSA has willfully ignored the law, scientific facts, nonpartisan traditions and its own staff recommendations.

Lives saved, injuries averted, and medical costs avoided are no longer NHTSA's guiding principles. Rather, the touchstone for NHTSA policy is conformity to a rigid political ideology and subservience to Detroit.

MOTOR VEHICLE SAFETY STANDARDS

Since 1968, safety standards issued by the NHTSA have saved an estimated 80,000 lives. State-of-the-art technology could save another 15,000 lives per year. Despite these facts, the administration has placed a moratorium on new rulemakings and rescinded important safety standards. The administration has:

- Revoked the automatic crash protection standard which would save an estimated 9,000 lives and thousands of injuries each year. As cars get smaller, without additional safety features, the administration predicts another 20,000 lives will be lost each year by 1990.
- Entered into a secret cooperative research program with auto manufacturers. The move preempts the development of new safety standards and restricts the government's ability to pursue research in safety areas not sanctioned by the industry.
- Turned its October 1981 promise to launch a "full court press" to get the auto industry to participate in an air bag demonstration program into "another team stall."
- Did not disclose its communications with the auto industry requesting participation in a voluntary air bag demonstration program. In written response, General Motors indicated it is unlikely to participate.
- Not initiated any advancements in motor vehicle safety standards, but rather has discontinued development of a side impact standard, despite over 8,000 deaths in this type of crash each year, in order to conduct cooperative research with the automotive industry.

- Ignored an agency report which found that chest and head injuries could be significantly reduced by inexpensive safety modifications to the steering column. Instead, the agency weakened the existing standard in response to a GM petition.
- Cut back research and delayed rulemaking for pedestrian protection despite the deaths of 8,000 children and adults each year from the impact of bumpers, rigid grills, and hood edges.
- Revoked numerous standards that would have improved the safety, security and maintenance of cars.

SAFETY BELTS

The cornerstone of the administration's activities is a $9.6 million safety belt campaign. The agency's "unofficial" goal is a 20% increase in belt usage. Even if attained it will still leave 70% of all occupants unprotected. Automatic crash protection would achieve this goal in about three years and would protect all occupants in 10 years. In the meantime:

- The administration is making no improvements in the reliability of safety belts or the comfort of using them despite studies showing that most people do not wear belts because they are uncomfortable and inconvenient.
- No efforts are being made to enhance public awareness and use of existing passive seat belts.
- Funds have been diverted from critical program areas to finance a safety belt campaign that past research, safety experts, Members of Congress, and the insurance industry views as dubious.

MOTORCYCLES

Motorcycle fatalities have jumped 53% since 1976 following the revocation of mandatory helmet laws in 28 states. Moped deaths have increased 218% since 1977. The administration's response has been to ignore the problem altogether. Ignoring staff recommendations, the administration has dropped motorcycle safety as a priority funding area in the state grant-in-aid program.

- All motorcycle research and development has been cancelled.
- Despite findings that motorcycle helmet use, driver training and improved visibility have a high pay-off in reducing deaths and injuries, NHTSA has abandoned all work in these areas.

55 MPH SPEED LIMIT

The 55 mph speed limit is credited with saving more than 54,000 lives and 28 billion gallons of gas since it was established in 1974. Despite strong public support for retaining it, the administration is circumventing the program in several ways:

- State enforcement programs have been hampered by a reduction in grant-in-aid funds, cancellation of all new research and development money and the termination of technical assistance.
- For the first time ever, six states may lose federal highway funds for not complying with the 55 mph speed limit.
- NHTSA has rescinded a rulemaking to establish federal standards for the purchase of radar equipment. This is needed to ensure that speeding violations are upheld in court.

PUBLIC INFORMATION

In direct contradiction to the Reagan philosophy that an "informed public" should be the controlling force in the marketplace, the administration has reduced, eliminated and deliberately withheld information from consumers. This belies the rationale underlying the administration's public relations program to increase safety belt use.

- In violation of the law and in blatant disregard of congressional requests, NHTSA's annual report still has not been sent to Congress for two years.

- The technical library staff has been reduced and consumer information is difficult to obtain. Regularly published bibliographies have been halted, computer accessing curtailed, and photocopying requests delayed for weeks.
- The administration has asked the federal court to revoke a 1969 consent decree that prevents domestic auto manufacturers from hiding the technological capabilities of individual companies to comply with proposed safety standards in their rulemaking comments.
- The administration has slowed efforts to provide consumers with information on the crashworthiness of cars. Crash test results are incomplete and made available to the public in a haphazard manner. By the time the test data is released (at the end of the model year), it is obsolete.
- The Car Book has been discontinued. Twelve of the thirteen free auto and highway safety publications have been removed from the Consumer Information Center in Pueblo, Colorado.
- Air bag demonstration cars and the Research Safety Vehicles (RSV's) are banished to the DOT garage and are rarely used for public education.
- The administration had discontinued the successful Research Safety Vehicle (RSV) program. Inexplicably, they are sponsoring and attending a conference in Japan on "Experimental Safety Vehicles" in November 1982.
- Despite administration boasting, actual use of the NHTSA auto safety hotline shows it to be ineffective in providing clear, concise and timely information.

SAFETY ENFORCEMENT AND DEFECTS INVESTIGATION

NHTSA's safety enforcement and defects investigations programs suffer from improper secrecy and delays. Large numbers of engineering analyses cases are being terminated and complaints go unanswered.

- A new system of "informal inquiries" into potential defects has been inaugurated in order to close out public scrutiny of defects investigations.
- Requests to view engineering analysis documents which formerly took a day to receive now take over a month.
- Quarterly reports on domestic and foreign recall campaigns are not being published on time.

BRAIN DRAIN

The administration has removed key professionals critical to the agency's ability to carry out its statutory mandate.

- More people have left NHTSA in 19 months -- over 200 -- than left the Veterans Administration, Education, Justice or Energy Departments in Fiscal Year 1982.
- NHTSA has sustained twice its proportional share of DOT staff cutbacks.

WHAT OTHERS SAY . . .

"Technology, like nature, is an indifferent partner to man. Used and promoted with zest and innovation, it can work to better the human condition -- to create more jobs, stimulate more profits, increase productivity, lengthen the span of human life, and better the national health and well being. Misused or ignored, it can frustrate progress, discourage growth, and hurt the very people who should benefit from it."

Insurance Institute for Highway Safety
1981

"Given that Congress specifically set out what it expected NHTSA to do, one thing is abundantly clear -- we did not give NHTSA a choice of whether or not to promote safety. Congress required the agency to establish safety standards to save lives, to reduce injuries and to meet the need for motor vehicle safety. Congress has specifically rejected the idea of letting automakers decide whether or not to make cars safer. Furthermore, Congress has rejected trying to modify the behavior of drivers as the sole safety initiative, in favor of a systematic, technological approach designed to combat deaths and injuries."

Rep. Timothy Wirth (D-Colo) Chairman,
Subcommittee on Telecommunications,
Consumer Protection and Finance
1982

". . . here is an agency [NHTSA] which seems under its present management intent on doing away with almost anything constructive with respect to traffic safety. . .

Congress created NHTSA to promote safety. I really do not know if this agency is aiding traffic safety or whehter it is engaged in some sort of search and destroy mission against any useful idea that is put forward to make the highways safer. Indeed, NHTSA now seems to be doing all it can to thwart safety. . ."

Senator John Danforth (R-Mo)
Chairman, Subcommittee on
Surface Transportation
1982

"The estimated impact of the proposed rescission [FMVSS 208] on the automobile industry is miniscule. There will be little or no improvement in the 'health' of the domestic automobile industry from the proposed rescission. For this reason, nonregulatory considerations discussed in the notice (the effect on sales, the profits of the automobile companies, or freedom-of-choice arguments) should not, from an economic point of view, enter in this rulemaking."

Professor William Nordhaus
Former Member, President's
Council on Economic Development
1981

"No words from the Department have expressed dismay or anger that the very manufacturers who applied their engineering skills to developing air cushion technology, and who repeatedly promised for a decade to give Americans a chance to buy that technology in the marketplace, with or without a federal passive restraint standard, have broken their promises.

William Haddon, Jr., M.D., President
Insurance Institute for Highway Safety
1981

"I have epilepsy, and my epilepsy is the result of an auto accident-related head injury, so I know whereof I speak. Epilepsy is a condition which requires lifelong drug therapy and medical care; it is a condition which subjects many who have it to job discrimination, educational discrimination, and social ostracism. It costs far more to deal with epilepsy not only in terms of dollars but also in terms of human frustration and in terms of lost productivity, than it could ever cost us to continue our efforts to reduce auto accident-related injuries which cause epilepsy.

Rep. Tony Coelho (D-Calif)
1981

"[the rescission of FMVSS 208] is generating a great deal of misguided comment concerning liberal versus conservative judicial decisionmaking, when the real issue is whether or not a federal agency can overrule Congress. . . I concur with the court's decision. We cannot allow a federal agency to accomplish through rulemaking what Congress refuses to approve legislatively. Such actions would undermine the foundations of our democratic system of government and rule of law would be rendered meaningless.

Senator Orrin Hatch (R-Utah)
1982

MOTOR VEHICLE SAFETY STANDARDS

The Reagan adminstration has declared war on health and safety regulations. Automobile safety requirements are one of the major targets. They are treated as an unnecessary irritant the auto industry has had to tolerate too long.

This ideology of deregulation at any cost ignores the legal, historical, scientific and human basis for vehicle safety standards. In the abstract, this might be an interesting debate, but in fact, there is an overriding imperative -- many lives are being needlessly lost on the highway every day because of the Reagan administration actions.

In 1966, the Congress recognized that the old slogan "the life you save may be your own" was doing little to halt the raging epidemic of death and injury on highways. Congress instead inaugurated a bold new, scientific approach requiring safety features to be designed into automobiles. 1/ Two scientists were selected to organize this exciting new public health program, putting great emphasis on developing research and data to guide the operational programs. The agency searched for an array of scientifically based remedies and created a data center to gather information about the types of crashes, deaths, and injuries occurring on the highway.

The Congress was prophetic. Since 1966, more than 80,000 lives and countless injuries have been saved because of the vehicle crash safety systems designed into cars. 2/ These systems include laminated windshields, collapsible steering assemblies, side impact protection bars, and more. They constitute one of the most important public health programs in the U.S. Their cost to a new car buyer 3/ is about $350 (and far less to manufacturers), or approximately the price of a car AM/FM radio and exterior trim package.

Faced with the challenge of reducing deaths and injuries as quickly as possible, NHTSA from the beginning has had one overriding objective: to expeditiously foster the scientific development of technology that could save the most lives.

For a number of years automotive industry engineers had understood the importance of protecting occupants from the "second collision" of the occupant against the hostile vehicle interior in a crash. For example, in discussing the rationale for the 1956 Ford Lifeguard Car, an internal Ford document from 1955 explained:

> Since it is impossible to eliminate all human failure, the Ford Motor Company . . . has stepped forward with a "passenger packaging" program

> aimed at protecting occupants involved in an accident caused by human error.
> Basically there now are two kinds of safety built into automobiles.
>
> The First Type
>
> One is preventive -- the type aimed at avoiding accidents. This is the type that has helped reduce the accident rate per vehicle in operation. Included in this grouping are improved brakes, better steering, reduced fatigue, tougher tires, greater visibility. Ford has led the way on many occasions in this field, and will continue to do so.
>
> The Second Type
>
> Now, however, the Company has pioneered in a second type which will trigger off a new safety movement in the automobile industry. This second -- and new -- type of automotive safety is aimed at protecting the passenger and reducing crash injuries when, and if, the passenger is involved in an accident.
>
> Installation of passenger packaging features is a revolutionary breaking of new ground in line with Ford's determination to fulfill its responsibilities of industry leadership in many other fields. [4]

In 1968, after the initial vehicle standards were issued, it was recognized that they were very crude, often measuring only the strength of the vehicle components, but not the degree of human injury. In 1969, the agency began to study air bags, a new "technological vaccine" being developed by Eaton, Yale and Towne with Ford Motor Company. The new technology would automatically cushion occupants in frontal crashes, where 55% of the fatalities occur. Research, testing, and analysis with instrumented manikins and full scale vehicle crash tests were begun.

Agency scientists soon realized that literally thousands of lives could be saved -- perhaps as many as half the occupant deaths -- with this new space age concept of automatic crash protection.

In 1971, Secretary of Transportation John Volpe issued the automatic occupant restraint standard. It was partially overruled by the Court of Appeals, then replaced by the safety belt interlock, and then indefinitely postponed by Secretary William Coleman. After this tortuous history, it was finally reissued in 1977 by Secretary Brock Adams as the first automobile safety standard to require a dynamic crash test into a solid barrier, thus simulating a crash. It was also the first standard to use instrumented manikins representing occupants, for measuring injury levels.

During the 1970's NHTSA safety engineers conceived the plan to consolidate the 15 crashworthiness safety standards into four major crash test standards for frontal, side, rear and rollover crashes. With the frontal crash protection standard (FMVSS 208) issued, the next priority in terms of the number of fatalities, was side impact protection. In 1978, NHTSA issued a five-year rulemaking plan focusing on the types of crashes that involve large numbers of fatalities and injuries, for which it would be feasible to manufacture more protective car designs. In the January 5, 1981 revised plan, the key areas identified for high payoff and near term action were: 5/

- Improved side impact protection, because nearly 10,000 occupants are killed and several hundred thousand others are disabled in these crashes each year. An advance notice was proposed in 1979 in anticipation of a notice of rulemaking in the spring of 1981.

- Pedestrian protection, because about 8,000 pedestrians, mostly the young and the old, are killed by motor vehicles each year. About 130,000 pedestrians are injured each year. A notice of rulemaking was proposed in January 1981.

- Automatic frontal crash protection for light trucks and vans, because over 3,000 occupants are killed in frontal crashes each year in these vehicles. A notice of rulemaking was scheduled for issuance in 1981.

- Heavy truck brakes, because fatal crashes involving heavy trucks have increased by over 50% since 1975. Research was underway to establish a new standard, with a notice of proposed rulemaking covering stopping distance scheduled for 1981.

The scientific research of the past decade supporting the adoption of the existing safety standards and the ongoing rulemaking has been rejected by the policy decision-makers now in the Department of Transportation. The first rationale served up was the need to "help Detroit" out of its economic troubles. Representative Timothy Wirth commented aptly on this proposition:

> To the extent the economic condition of the industry has changed, it is my considered opinion that such a fact is relevant not to the agency's deliberations, which must be guided solely by safety related concerns under its statutory mandate, but only to Congress. In passing the National Traffic and Motor Vehicle Safety Act, Congress did not intend that safety requirements would move up and down with the fortunes of the general economy or with the economic conditions of the automobile industry, in particular.

> Such factors can be considered by Congress in any future legislative deliberations, but are not to enter into the agency's decisions on auto safety regulations. 6/

Rep. Wirth calculated the revocation of standards in the Reagan Administration's April 6, 1981 "Help Detroit" package 7 would save a new car customer only $9.00. 8/

In addition, economist William Nordhaus, formerly a member of the Council on Economic Advisors to the President, commented on the automatic restraint standard (FMVSS 208) on behalf of the insurance industry:

> The estimated impact of the proposed rescission on the automobile industry is minuscule. There will be little or no improvement in the "health" of the domestic automobile industry from the proposed rescission. For this reason, nonregulatory considerations discussed in the notice (the effect on sales, the profits of the automobile companies, or freedom-of-choice arguments) should not, from an economic point of view, enter in this rulemaking. 9/

A second Reagan rationale for revocation or inaction on vehicle safety standards is the allegation that the standards lack quantifiable benefits. Where benefits are measurable in the auto safety standards, they far outweigh the costs. But, in some instances, as with the automatic restraint standard, the outcome has been manipulated by dismissing high payoff designs such as air bags, and focusing on the worst system, detachable belts, that manufacturers say they would use, and then claiming these will not increase restraint usage.

While the safety statute requires that the standards be practicable, it does not require a showing of a quantified excess of benefits over costs. For the less visible standards, it is impossible to take precise measurements of their value. However, they address obvious problems, and their costs are minuscule. Cost and benefit analysis is a sham in such circumstances.

A third argument is sometimes made that we have reached the limits of our technological capacity to build safety improvements into cars. This highly deceptive statement, made by the Administrator before the House of Representatives Commerce Committee in March, 1982, is one example: "We are reaching the limits of the laws of physics in many instances. We are reaching certainly the limits of the ingenuity of our engineers in other cases." 10/

These statements are contradicted by research and technical papers prepared by NHTSA and automotive industry engineers. Further, the abundance of lifesaving safety technology has been shown by the research safety vehicles produced by NHTSA during the past decade and the NHTSA's New Car Assessment crash testing program. The Minicars research safety vehicle would save an estimated 15,000 lives per year if all cars on the road incorporated its safety performance characteristics. 11/

A fourth argument used by the Reagan Administration for inaction or revocation of safety standards is that with voluntary action and cooperation, the manufacturers will act expeditiously to incorporate improved safety into cars. History disputes this. Before the enactment of the auto safety law, Detroit manufacturers, with the temporary exception of Ford in 1956, resisted installation of important safety systems, even lap belts. 12/ During the middle 1970's, a period of relative inactivity in NHTSA, the manufacturers resisted adopting improved fuel tanks, making some members of Congress so angry that they threatened to enact a requirement into law. Secretary William Coleman, after discontinuing action on automatic restraints, had to badger the auto manufacturers to even get agreement on a voluntary air bag demonstration project. When Secretary Brock Adams asked them to continue their commitment in 1977, they refused.

In the summer of 1980, General Motors asked the Carter Administration to revoke or not act on 16 existing or proposed safety standards. (The Reagan Administration has since fulfilled most of GM's requests.) General Motors never offered in return to voluntarily improve their vehicles in these areas. 13/

There is another important fallacy in the proposition for voluntary cooperation. If a safety technology should be incorporated into cars, the public is not served by having it adopted in some and not others. This is confusing, and it is difficult for car buyers and users to keep track of which makes and models have which safety improvements. But more importantly, the sanctity of life for buyers of Hondas is no greater than it is for buyers of Chevrolets, as is implied by the thesis: "the manufacturers will do it on a voluntary basis." The name of the game for the manufacturers has always been to buy time and postpone expenditures. They are only too willing to eat up the clock with negotiations over cooperative agreements and voluntary projects whose results are usually negligible in any case.

Fifth, in Congressional testimony this spring, the Administrator claimed that the fastest way to get safety improvements built into cars is for the government and industry to arrange cooperative auto safety research activities. 14/ But the full extent of the administration's plans have been kept secret.

For example, the side impact Advance Notice of Proposed Rulemaking was withdrawn in July to permit consummation of a cooperative research project with the industry which is not permissible during rulemaking. This research project was not mentioned in the Federal Register withdrawal notice. 15/ In addition, there is a question as to whether this activity is permissible under the antitrust laws. In reviewing the proposed government/industry Cooperative Automotive Research Project (CARP) during the Carter Administration, the Justice Department and the Federal Trade Commission made it clear that this project was permissible under the antitrust laws only because it did not involve NHTSA or its rulemaking authority and because it was focused on the long range improvements.

The administration argues that cooperative research projects make "more efficient use of research and development resources" and get "safety improvements in production motor vehicles at a faster rate." 16/ But there are grave risks. Decisions negotiated secretly with the industry are likely to serve the interests of the industry, not the public. In addition, diversion of the agency's research funds, usually focused on developing test devices and technology assessment for rulemaking, could seriously delay completion of rulemaking in the future if cooperation does not work. Further, since the auto safety statute requires all agency research to be public, auto companies serious about developing and testing a competing technology will not participate. General Motors has always been proprietary about its research projects and has not been enthusiastic about participating in the CARP project.

Not only has the NHTSA diverted its limited vehicle safety research funds to cooperative industry projects, it has eliminated the $5 million Research Safety Vehicle program, a program mandated by law. At the same time, it is sponsoring an experimental vehicle conference in Japan in November 1982). 17/ The agency has dispersed most of its staff and discontinued the automatic restraints research. Almost all of the fuel economy research has been dropped, and the fuel economy rulemaking staff has been assigned to other offices or left the agency. 18/

The Reagan Administration is not deterred by law or science or history or the sanctity of life. Before looking more closely at actions on individual safety standards, a few additional insights are warranted.

- The Law. There is no authority in the automobile safety law for the government to compromise safety quality to compensate for Detroit's inability to sell cars. This would be the equivalent of allowing builders to disregard fire safety codes when there was a downturn in the housing industry. The U.S. Court of Appeals has already overruled one attempt to abandon, without any factual basis, the agency's most important vehicle safety standard requiring automatic crash protection (FMVSS 208). [19]

- Increased Death and Injury. The Reagan administration in October 1981, predicted an increase of 20,000 deaths per year by 1990 (and many more injuries) if the safety protection of the small cars now being designed does not increase. [20]

- Need To Protect Unrestrained Occupants. In a series of papers prepared for the Society of Automotive Engineers in February 1982, NHTSA engineers pointed out that, unless there is a rapid increase in belt use, attention should be directed to the key elements of the vehicle causing deaths and injuries because many occupants remain unrestrained. They identified the steering assembly, the instrument panel, windshield, front windshield pillar and side interior surface as the areas of contact in the vehicle interior causing the most harm to occupants in crashes. The most seriously harmed parts of the body are the head, face, chest and abdomen. [21] But not one single action has been taken -- not rulemaking by DOT nor improved safety designs in cars for sale by manufacturers -- voluntarily to improve these areas of the vehicle. Even worse, several important existing standards protecting occupants in these areas have been revoked or weakened.

- Safety Is Inexpensive. Incorporating safety improvements into cars is less expensive when new cars are being designed. With the massive redesign of cars in the 1980's, manufacturers could readily install significant safety features at a modest cost. In 1980, the Office of Management and Budget estimated that the safety features scheduled to take effect (as a result of standards issued or in rulemaking) constituted only 3% of all vehicle regulation costs (this includes FMVSS 208, automatic crash protection). In the last decade, only three safety standards have cost consumer more than $10.00 retail (three-point belts, side impact protection and bumpers).[22] Industry responses to a NHTSA inquiry in 1976 indicated price reductions of only $90 (in 1978 dollars), on a sales weighted average, if all safety standards were revoked. [23]

- Revocation of Standards Is Inflationary. The wholesale elimination of existing vehicle safety standards, and the refusal to issue new ones that would drastically reduce death and injury, is inflationary for two reasons. First, the benefits of the major vehicle safety standards vastly exceed the costs. Thus, instead of investing in new jobs in Detroit to build safety devices that enhance health and safety, consumers will pay more for the costs of death and injury -- increased insurance premiums and tax dollars for otherwise unnecessary health care, rehabilitation, long term care and medications, unemployment, welfare, as well as lost income and tax payments to federal and state governments.[24] Second, there is little likelihood that car prices will drop when the standards are removed. A case in point is the revocation of the safety belt ignition interlock in 1974.[25]

- Safety Paid For By Fuel Economy Savings. The Department of Transportation estimates that the savings to the 1985 car buyer from increased fuel efficiency (in large measure as a result of the 1975 law and NHTSA's standards) would amount to more than $3,000 over the lifetime of the car compared to the 1977 car buyer.[26] With air bags for frontal crash protection costing less than $200 in high volume mass production,[27] and side impact and pedestrian protection costing much less,[28] these key improvements could be paid for with about one year's fuel savings. This does not include savings from auto insurance premium reductions, estimated by Nationwide Insurance Co. to be $44 each year for air bags,[29] or savings to highway users from reduction in auto crash death and injury costs. Total cost of highway death and injury is about $20 billion per year in the U.S. for medical care income maintenance, insurance, etc.

- Product Liability Shield Requested. At the same time that the automotive industry is pressing the government to reduce or eliminate federal safety standards, it is asking the Congress to enact a federal law shielding manufacturers against product liability if they comply with relevant federal safety standards.[30] With the Reagan administration weakening or gutting federal standards covering most areas of the car, this proposal by the manufacturers would hinder or prevent people injured in crashes and suing for recovery of damages in challenging unsafe designs.

- Public Supports Safety. Public opinion polls and marketing surveys show strong public support for built-in automotive crash protection in general and air bags in particular. These include: (a) three General Motors marketing surveys concerning air bags in 1971, 1978 and 1979;[31] (b) 1977 Gallup poll endorsing air bags 46% for to 37% against; (c) a 1978 Volvo poll showing 58% favor air bags which were the "overwhelming favorite" after owners were given information about passive restraints; (d) a 1978 Harris poll for Amtrack showing that 83% of those surveyed believed improved auto safety as the most important transportation improvement; (e) a 1979 ABC/Harris poll showing 51% believed the federal government is moving too slowly in making autos safer; (f) a 1980 New York Times Poll conducted by Market Opinion Research of drivers and auto dealers in Detroit, Michigan, showing nearly half the drivers favored requiring car manufacturers to equip all new cars with air bags. (But 93% of the dealers were opposed.)[32]

- Moratorium and Revocation. Disregarding the predictable increase in deaths and injuries, Secretary of Transportation Drew Lewis, in a defiant speech to the National Automobile Dealers Association, three weeks after taking office, stated, "If I could do it, it would be a four-year moratorium. I know four years is unrealistic, but my point is that this administration opposes regulations." 33/ Secretary Lewis in fact went even further. His agency has additionally revoked or weakened a number of existing vehicle safety requirements. These actions warrant a brief review.

Frontal Crash Protection

1. Automatic Crash Protection: Motor Vehicle Safety Standard 208

This safety standard, when fully effective, would save at least 9,000 lives and prevent about 65,000 disabling injuries each year. The Salk vaccine pales by comparison. Nevertheless, the elimination of this rule is a top priority of the Reagan administration.

For over 12 years, under the bipartisan leadership of Transportation Secretaries Alan Boyd, John Volpe, Claude Brinegar, William Coleman, Brock Adams, and Neil Goldschmidt, the agency conducted extensive design, testing, technological evaluation, and accident investigation of research and production vehicles with air bags and automatic belts meeting this standard. Extensive work was also carried out by the auto industry.

In 1974-76, 10,000 air bag-equipped cars were sold to the public by General Motors. Evaluation by DOT shows that fatalities in air bag-equipped cars are half the number in equivalent manual belt cars where belts are rarely used. 34/ Since 1975, Volkswagen has sold over 400,000 automatic belt cars. Thousands more have also been sold by Toyota and other manufacturers. Automatic safety belt usage rates have been observed to be about 75%, compared to rates of 20% to 30% in foreign cars with manual belts. Evaluation by DOT shows automatic belts are as effective as manual belts, if worn, but since automatic belts are used more frequently, many additional lives are saved. 35/ Manual belts in all cars are used by only 11.5% of the occupants according to the NHTSA's most recent cumulative observations in August 1982. 36/

In June 1977 Secretary Adams issued the automatic restraint standard in conjunction with the fuel economy requirements to assure improvements in both safety and fuel economy. This strategy was adopted to guard against a large projected increase in deaths and injuries that would accompany vehicle downsizing if additional safety improvements were not adopted. 37/

On October 23, 1981, DOT (after delaying the standard for one year) revoked Standard 208 based on the flimsy rationale that the standard would save few, if any, lives because most occupants would remove the detachable belts the Detroit manufacturers said they would use. 38/ This decision, overruling the advice of the top staff of the agency, demonstrates the ultimate rejection of the scientific approach to motor vehicle safety. Obviously, if the particular design chosen for compliance with the standard did not achieve its purpose, the agency should have adjusted the standard.

The U.S. Court of Appeals chastised the agency in overruling this action on June 1, 1982. The court told the agency that its decision "failed to heed the goals that Congress asked it to meet." The decision was supported by "not one iota of evidence," said the court, and "wasted administrative and judicial resources." In addition, "NHTSA's arbitrary action presents a paradigm of ineffective regulation." In a concurring opinion, Judge Harry T. Edwards told NHTSA its decision "appears to be nothing more than a determined effort to achieve a particular result without regard to the facts at hand," an action that "cannot be sanctioned in this court."

The court told NHTSA to prepare a schedule for implementing the standard unless it could justify suspension or delay. On August 4, 1982, the court rejected NHTSA's response and ordered the standard to take effect after September 1, 1983. It gave NHTSA until October 1, 1982 to tell the court if the 1984 model year deadline was not achievable. 39/

While proclaiming an interest in buying an air bag for his own car and that his "overwhelming concern has been safety" in revoking FMVSS 208, the NHTSA Administrator has discontinued research on automatic restraints. The research safety vehicle (RSV) program, which demonstrated that advanced air bags could protect occupants in 50 mph crashes, has been eliminated; 40/ and the words "air bags" are rarely referenced in documents prepared by the agency in the last 18 months. The regulatory analysis for the revocation barely mentioned, let alone discussed, this premier technology. 41/ In papers prepared for a February 1982 conference of the Society of Automotive Engineers, "A Search for Priorities in Crash Protection," agency staff strained not to give air bags any prominence. 42/

In announcing the revocation of FMVSS 208, the Administrat argued that mandatory safety regulation is not necessary:

> I believe that only by rescinding the standard and proceeding immediately with a major effort addressed at all levels of the automobile industry, and the manufacturers and suppliers of that

> industry, will we be able to identify, demonstrate and offer to car buyers the most advanced safety technology that the long range mission of this agency requires. 43/

During the question and answer period the Administrator stated:

> It is time to stop the uncertainty about this standard. It is only by rescinding the standard and proceeding with what I have called this morning, in several phone calls to the Congress, a 'full court press' on technology that we will be able to make material, substantial impacts on reducing death on the highways. 44/

During the press conference, the Administrator committed himself to begin negotiations with the automobile industry immediately.

More than ten months later, the "full court press" has turned into another team stall. The grand proclamation that NHTSA would negotiate with the auto industry to voluntarily "adopt the newest safety technology" is simply part of last year's news.

The administration has tried unsuccessfully to emulate Secretary Coleman's feat in setting up an industry air bag demonstration program. To date, only Ford Motor Company and a few smaller importing companies have expressed any willingness to participate. Ford spoke out publicly at a hearing held by Senator John Danforth (R.-Mo) before the Senate Finance Committee shortly after receiving a letter of inquiry from the agency dated January 20, 1982, but conditioned its support on watering down the standard's test requirements:

> Ford has advised NHTSA that we endorse the concept of a cooperative government/industry demonstration program and will work to make it a reality. In order to develop a practical program, however, we believe ways must be found to simplify the effort. We believe the cost, complexity and lead time of a cooperative program can be materially reduced by modifying the regulations that presently govern passive restraints, and have indicated to NHTSA that we are ready to discuss the issues involved. 45/

Essentially the same letter, which was sent to a number of other companies, and the answers, have never been made public. General Motors' reply was characteristically negative:

> In view of our disappointing air bag sales experience in 1974-76, and because we are not aware of any changes since then that would cause us to be more optimistic now, we would expect the results of another demonstration to be similarly disappointing. Nevertheless, we are willing to discuss the matter with you and take into account any new information, including a review of our previous marketing efforts.46

This response by General Motors was disingenuous. In an appearance on the Phil Donohue show in 1979, General Motors President Pete Estes admitted the company had done little to promote air bags in the mid-1970's. This fact was documented in a 1976 Wall Street Journal article by Albert Karr. 47/ Yet when Secretary of Transportation Brock Adams asked the auto industry to continue the Coleman demonstration program or some variation of it in preparing to implement FMVSS 208, industry officials would not even talk about it. Now they apparently are willing to talk, but as another year slips by, nothing concrete has emerged.

In the meantime, the auto industry touts the importance of safety in a few newspaper and television advertisements but can cite few genuine accomplishments. The American public cannot buy an air bag; the best protection available is an outdated standard requiring installation of seat belts; and the requirements for crash testing cars and measuring injury levels are revoked.

Revocation of the automatic frontal crash protection standard has enraged a number of key subcommittee chairmen who oversee NHTSA. Representative Timothy Wirth (D.-Colo.) reacted by stating:

> NHTSA's Administrator Ray Peck has today signed the death warrant for thousands of Americans, while sentencing millions more to a life of serious disability and injury. By rescinding the automatic crash protection standard, Mr. Peck has completely caved in to the demands of the auto industry. He has not only abrogated his responsibility as the person charged with keeping American motorists safe, but he has cost the public billions of dollars in payments for support of the families of the dead, and for the care of those who are seriously disabled by automobile accidents. The tragedy is that the technology exists to save these lives cheaply, but the auto industry refuses to use it. Instead, American industry has purposely proposed to use automatic crash protection devices that are "poorly designed" by NHTSA's own standards, and will not be worn. Unfortunately, this will once again put American cars at a competitive

> disadvantage with imports, as makers such a Toyota and Volkswagen, are already selling cars equipped with comfortable, well designed automatic devices. 48/

Senator John Danforth urged NHTSA to "stop fighting safety" and to comply with the ruling of the Court of Appeals. In a Senate speech, Danforth complained that NHTSA's "dilatory tactics are totally inconsistent with its mandate from Congress. . . . NHTSA, under its present administration is squandering public funds and wasting judicial resources to stall implementation of a technology proven over and over again to save human lives -- thousands of lives." He added, "We need the protection of the passive restraint standard and it is time we had it." 49/

Senator Orrin Hatch (R.-Utah), in a Senate floor statement in July, 1982, noted that the NHTSA rescission of the standard:

> [i]s generating a great deal of misguided comment concerning liberal versus conservative judicial decisionmaking, when the real issue is whether or not a federal agency can overrule Congress. . . . I concur with the court's decision. We cannot allow a federal agency to accomplish through rulemaking what Congress refuses to approve legislatively. Such actions would undermine the foundations of our democratic system of government and rule of law would be rendered meaningless. 50/

In addition, Rep. Tony Coelho explained his disagreement with the administration's actions:

> Head injury is one of the leading causes of epilepsy in adults, and auto accidents are a leading cause of head injury. . . . A sizeable proportion of those head injury cases result in the subsequent development of epilepsy. . . .
>
> I have epilepsy, and my epilepsy is the result of an auto accident-related head injury, so I know whereof I speak. Epilepsy is a condition which requires lifelong drug therapy and medical care; it is a condition which subjects many who have it to job discrimination, educational discrimination, and social ostracism. It costs far more to deal with epilepsy not only in terms of dollars but also in terms of human frustration and in terms of lost productivity, than it could ever cost us to continue our efforts to reduce auto accident-related injuries which cause epilepsy.

> The administration's argument that we must delay implementaiton of our auto safety standards in the name of economy just does not hold water. Not when we know that the medical costs for treating one case of severe head injury along can go as high as $40,000 to $50,000. 51/

One reason the legislators are angry at the revocation of this key standard is that it would save many lives and is cost-beneficial. William Nordhaus explained:

> The size of the net benefits indicates that the proposed rescission would be extremely costly to the nation. It would cost approximately $2.4 billion for every year of the delay, and a total and indefinite rescission would impose costs on society of more than $30 billion for a steady state 1984 auto fleet. The costs of a rescission are 3-1/2 times the benefits.
>
> In terms of injuries and fatalities, the steady state effect of rescission with the 1984 fleet would be to increase fatalities by approximately 6,400 per year, and increase moderate to critical injuries by at least 120,000 per year. 52/
>
> * * *
>
> Moreover, automakers' submissions provide evidence that incremental capital costs of automatic belts are approximately $3 per car, far below the automaker's estimate of $100 per car of consumer costs. 53/

Not only does revocation of FMVSS 208 undermine the likelihood of achieving higher restraint usage, it also undercuts NHTSA's long-held commitment to full fledged performance standards, which require vehicle crash testing and measurement of injury levels. This sophisticated testing is crucial to the development of future safety standards and the improvement of existing ones. The current belt standard requires only that belts be installed, with some modest laboratory testing to make sure they do not break.

The automatic restraint standard, by comparison, requires sophisticated instrumented manikins in the front seat be automatically protected in a 30 mph barrier crash test. This kind of test is important to ensure that manufacturers design the entire front compartment to protectively package the occupants. Dynamic testing is also needed to spur improvements in the structure (crash pulse) of the vehicle. With modest strengthening and rearrangement of the front structure, a number of manufacturers have improved the crash pulse in anticipation of having to meet FMVSS 208. Without this crash test standard, however, this invisible but critical safety benefit will surely be sacrificed by manufacturers.

The importance of vehicle structural design was explained in a 1981 NHTSA report on small car safety:

> The ability of a vehicle structure to provide a survivable environment can be assessed by two key measurements: the duration of the impact and peak deceleration of the occupant compartment. A longer duration of the impact event will generally provide a more controlled collapse of the vehicle and subject the occupants to a 'softer' ridedown. A high level of deceleration in the occupant compartment presents an environment with a greater likelihood of injury.
>
> The longer impact duration and lower peak deceleration result in a greater potential for occupant safety if occupant compartment integrity is maintained. 54/

Four months after FMVSS 208 crash test requirements were revoked, several senior agency engineers acknowledged the importance of the crash performance of vehicles in a paper to the Society of Automotive Engineers entitled "A Search for Priorities in Crash Protection." The paper explains that a proper vehicle crash pulse in frontal crashes "influences the impact velocity of the occupant's body regions against various components of the frontal interior surface." The authors indicate that "it applies to a very wide range of injury," and "most important, if a 10% reduction of occupant impact velocity is plausible. . .this is equivalent to a 10% reduction in crash severity." 55/

2. Steering Assemblies

The SAE paper also emphasized the critical role of the steering assembly in fatal and serious injury crashes. In fact, the paper identified the steering assembly as the single largest source of serious harm or death to 27% of car occupants, affecting particularly the chest (53% of the injuries), abdomen (25%), and head (7%). The paper also found that steering assembly contacts produce 30% more harm in light trucks than in cars. While the paper tells us that the existing requirements controlling rearward displacement have virtually eliminated this intrusion hazard in the less severe half of all crashes, injury causation by vertical displacement needs further attention.

In January 1981, NHTSA published an evaluation of federal motor vehicle safety standards for passenger car steering assemblies. (The standards did not apply to light trucks until 1982 models, although Ford Motor Co. did install them in some earlier models.) These standards, FMVSS 203 for impact protection for the driver, and FMVSS 204, for rearward column displacement, first applied to 1968 model passenger cars (although some 1967 models contained the improved steering assemblies). The NHTSA study found that 21,600 serious injuries and deaths were avoided in 1978 because of these standards. Their average lifetime cost to the car consumer is $10.46. */ 56/

The agency evaluation report also identified shortcomings in steering assembly systems, even though they are currently manufactured in compliance with these two standards. The flaws:

- Failure of the energy absorbing devices to compress in about half the crashes in which they are heavily impacted by drivers;
- Tendency to bind rather than compress when exposed to nonaxial loads (loads that are not directly perpendicular);
- Standard 204 has not reduced the incidence of steering column displacement in a primarily upwards or sideways direction;
- Since improvements to the spokes, rim and face of steering wheels have been voluntary, they have not been uniformly applied.

A paper prepared by an agency specialist for the February 1982 meeting of the Society of Automotive Engineers reported the manifest benefits of the steering assembly standards. It reported that in post-1968 passenger cars, there were 38% fewer serious-to-fatal driver injuries as a result of the steering assembly. The paper identified, however, a number of deficiencies in the test procedure in the current standard:

- The test procedure does not physically simulate the driver impacting the steering assembly in actual crash situations.
- The test device is not a good human surrogate and the performance criteria are not adequate indicators of injury severity.
- The inability of the test and/or performance criteria to distinguish "good" and "bad" design steering assemblies as a result of the previous inadequacies. 57/

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*/ This figure covers $8.87 for car modifications to meet the standards, $.33 for voluntary steering wheel improvements and $1.26 for added fuel consumption for 1.11 pounds additional weight.

NHTSA research is currently attempting to correct the test deficiencies by amending the standard.

The 1981 evaluation report also recommended steps which should be taken to improve the two steering assembly standards:

- Include tests of nonaxial loading situations, to assure the column properly collapses under conditions of initial vehicle damage, unfavorable driver kinematics, upward steering column displacement, unfavorable steering wheel spoke alignment and oblique frontal crash forces.

- Modify the requirements of Standards 203 and 204 to control upward column displacement which even in smaller amounts can aggravate column binding, and in larger amounts magnify head injury risk. 58/

In December 1980, the NHTSA published a report entitled, "Small Car Safety in the 1980's." 59/ The chapter on the new car crash testing assessment program 60/ found that steering column performance was one of the three most decisive factors in vehicle crash performance and injury causation. The report explains that in several of the crash tests conducted by the agency,

> [t]he steering column displaced rearward or upward and caused severe loading to the dummy head and chest. This was particularly the case with some of the vehicles with transverse, front wheel drive engines. Steering column performance depends to a large extent on a column design which does not allow the column to be loaded by components in the engine compartment. 61/

The report suggested possible design solutions:

- adding a collapsible section;
- improving the energy absorbing characteristics of the column;
- designing the column assembly to prevent loading by vehicle components under the hood;
- providing an energy absorbing column that will absorb energy in bending and shear as well as in the axial direction.

Based on the engineering assessments, the agency estimated that:

> [t]he costs of any of these modifications should not exceed $15 per vehicle even if they were made as running changes without waiting for major vehicle design. These tests clearly show that the state of the art in steering control design can provide for good performance. With only minor redesign and minimum cost, most of the poor performing columns could be significantly improved. 62/

After the new car crash tests identified the strategic importance of the steering column in crash injury causation in 1980, the agency initiated a focused research program to develop new tests for improved steering assembly standards.

Yet, to date, this program has not produced any proposals for improvements in the standards. Quite the contrary: in response to a General Motors petition, the agency in 1981 proposed an amendment to Standard 203 to weaken the current standard (it would allow the force measured on the steering column to exceed 2,500 pounds for intervals of cumulative duration of not more than 3 milliseconds). GM wants the standard changed so that it can build 5 degrees more tilt into its tilt and telescoping steering columns. In 1976, the agency denied a similar petition for lack of biomechanical data to justify the greater force on occupants. Now, based on three sled tests conducted by General Motors and submitted with its 1981 petition, the agency has granted the GM request. The agency said the GM tests showing abrupt, short duration forces "apparently do not transmit potential injuries to the driver."

As if to mollify safety specialists, who realize that the proposed amendment would weaken one of the most important safety components in cars, the agency added the following statement to the October 1, 1981 Federal Register notice: "The agency is currently considering the feasibility of setting additional performance requirements in Standard No. 203." 63/ This intention has not yet been translated into action.

3. Other Frontal Crashworthiness Standards

The NHTSA has failed to act in the car users' interest in three other areas providing crash protection: rear underride guard, glazing materials for windshields, and safety belt comfort and convenience.

Truck Underride Guard Protection

NHTSA has not acted on the pending notice of proposed rulemaking for heavy vehicle underride guard. This standard would minimize the likelihood of death or injury to occupants of cars that collide into the rear of trucks and trailers. In issuing the notice, NHTSA found that 500 people died in 1978 in vehicle-into-truck rear end crashes, and estimated that the proposed standard could reduce the excessive underride that occurs in 30 to 40% of the this type of fatal crash.

Concern by federal safety officials about this problem dates back to the Interstate Commerce Commission in the early 1950's. NHTSA first initiated rulemaking efforts in 1967, but was stalled by trucking industry opposition. Following severe criticism by Senator Wendell Ford (D.-Ky) in early 1977, the agency again focused on the problem and issued a proposed rule in 1980. 64/

Laminated Windshield Laceration Protection

Since the 1968 models, all vehicles sold in the U.S. have contained High Penetration Resistance (HPR) windshields made with laminated glass that prevents an occupant's head from penetrating the windshield during a collision. However, the inner glass does shatter, causing more than 210,000 laceration injuries to passenger car occupants each year (occupants of light trucks and vans suffer similar injuries). In addition to being life threatening, these injuries can cause severe disfigurement and eye injuries. 65/ In April 1981, a new nationwide study by the Insurance Institute for Highway Safety estimated that motorists experience as many as 266,000 serious or severe auto crash facial lacerations annually, with 52,000 additional facial fractures.

IIHS petitioned NHTSA to amend the existing windshield safety standard to allow use of a new plastic inner liner developed by Saint-Gobain in France. It is called "Securiflex" and has been installed in more than 30,000 Peugeot and Audi automobiles sold in Europe. The NHTSA denied the petition, arguing that the the innerliner of plastic will not resist haze and may be more rigid than existing windshields, thus causing injuries. 66/ However, the agency has taken neither effective steps to investigate the validity of these speculative concerns, nor acted to pursue the rulemaking. According to the Feburary 1982 NHTSA paper, "A Search for Priorities in Crash Protection," almost 5% of all harm to car occupants in crashes is accounted for by head and face injuries from windshield contact. 67/

Safety Belt Comfort and Convenience

The agency issued the belt comfort and convenience standard in 1980 because all surveys showed that, among non-users of belts comfort and convenience are two critical factors constantly complained about. The standard was applied to automatic belts in cars, and to manual lap belts in cars and lap/shoulder belts in light trucks and vans. 68/ The contradictions of NHTSA's decision to eliminate most of the provisions of this standard are discussed further in the section of this report on belts.

Side Impact Crash Protection

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Each year more than 9,000 Americans die in side impact crashes, and approximately 20,000 suffer serious, non-fatal injuries. 69/ Eighty-six percent of all occupants involved in side crashes are hit by another vehicle, while 71% of the life threatening injuries occur in side crashes. Although only 14% of the occupants are in side impact crashes involving fixed object impacts (trees, lamp posts, telephone polls, etc. these crashes produce about 30% of the life threatening injuries. 70/

Federal motor vehicle safety standard 214 first became effective on January 1, 1973. A number of domestic vehicles complied with the standard earlier, following General Motors' introduction of the side door beams in large size 1969 models. However, there have been practically no improvements in side impact designs since 1969 when this concept was first introduced by General Motors.

In September 1979, NHTSA published an encouraging evaluation of FMVSS 214 which found:

- [W]hen all cars on the road will be in compliance (by the mid 1980's), Standard 214 will be preventing nearly 2,800 deaths, 4,000 severe or life threatening injuries and 3,000 moderate injuries per year in single vehicle sidedoor impact crashes.

  This is a reduction of up to 50% or more compared to pre-standard cars involved in single vehicle sidedoor impact crashes. 72/

- The standard is most effective in preventing deaths and injuries in single vehicle crashes, and in crashes with a primarily nonlateral direction of force. The most plausible speculation is that these crashes involve contact with stronger structural members (sills and pillars) as well as the door. The improved door structure in the post-standard cars acts in tandem with the sills or pillars, possibly enabling the vehicle to "slide by" impacting objects, preventing more serious structural engagement and smoothing out the peak forces on the vehicle. Also, in the nonlateral crashes, the lateral force component (against which the beam offers least resistance) is relatively small. 73/

- [T]he Standard is less effective in multi-vehicle crashes than in single vehicle crashes. 74/

- An average of $30 (in 1977 dollars) was added to the price the consumer paid for 1973 model cars as a result of the standard. Although the added weight of 36 pounds in these models would use about 40 gallons of gas over the life of the car, the report estimates that the structural and weight costs may have decreased since 1973 models by as much as 25% as a result of downsizing and more efficient design. 75/
- The significantly lower effectiveness of Standard 214 in primarily lateral vehicle-to-vehicle side-door impacts suggests that there remains considerable potential for improving occupant protection in these crashes. 76/

Thus, FMVSS 214 is effective in preventing death and serious injury in single vehicle crashes where about 30% of the life threatening injuries occur, but does not do the job for the 70% involving vehicle-to-vehicle crashes. 77/ Also, smaller cars, which now dominate the new car sales, need improved side impact resistance even more than the larger cars for which Standard 214 was primarily designed.

In December 1979, the NHTSA issued an advance notice of proposed rulemaking to upgrade FMVSS 214 and held a major two-day meeting at which the agency staff presented papers outlining the problem and possible solutions. The existing standard was based on static test conditions -- crush resistance requirements for the side doors when pressed with a rigid steel cylinder test device in a vertical position. The Advance Notice, however, proposed performance criteria for occupant protection with dynamic crash tests, which would more closely resemble real world crashes. In this respect the proposed standard resembled the automatic restraint standard.

The Advance Notice indicated four areas of research underway to help develop the performance standard:

- development of a test procedure, including a moving barrier impactor;
- development of an instrumented dummy and injury criteria;
- development of vehicles to demonstrate improved side impact performance;
- analysis of existing accident data.

Recognizing that issuance of the standard was at least 18 months to two years away, the notice urged the auto companies to make the following modest improvements prior to the new rule's effective date:

- use laminated glass in side windows and strengthen door hinges and latches -- improvements that would reduce ejections;
- upgrade the welding of A and B pillar assemblies;
- provide more overlap of the outer door skin with the outer sill;
- improve padding on the roof rail and pillars. 78/

If the manufacturers have incorporated any of these side impact performance features in their cars -- consistent with the new era of "voluntary" compliance -- they have not told the public.

Instead of issuing the Notice of Proposed Rulemaking in 1981, as had been planned, the NHTSA summarily withdrew the Advance Notice on July 12, 1982. It gave the explanation that the agency's research "has demonstrated that there are many questions remaining concerning the most appropriate test methodology and performance criteria and levels. Many complex issues have arisen which will require considerable time to resolve."

The agency further explained that since more than two years had elapsed since the Advance Notice was issued and much research remains to be completed, the agency was terminating the rulemaking. It assured the public, however that the rulemaking would be reopened "after research and analysis has progressed to the point that appropriate test methods and performance parameters can be developed," a process that would likely take a year. 79/

What the agency did not reveal in the Federal Register notice is that it was quietly arranging to work with the Motor Vehicle Manufacturers Association on some "cooperative" side impact research projects, 80/ and it did not want to have to comply with the rulemaking disclosure requirements in effect when the side impact rulemaking was pending.

This withdrawal of the rulemaking is inappropriate for several reasons. First, it contradicts the premise of the Administrative Procedure Act, that agency rulemaking is to be conducted in a public forum, with equal opportunity for participation for all interested parties. Second, the withdrawal notice throws a veil of secrecy over the research and information needs of the agency in its quest to develop the standard. Interested parties cannot help to identify the key issues, publicly debate technical issues, or develop workable situations.

Third, this notice ignores the substantial paper presented by two top agency engineers at the Society of Automotive Engineers in February 1982 which concluded:

> In recent years the emphasis of the NHTSA side impact program has been on the development of a full scale test procedure for use in reduction of chest injuries. This emphasis has led to the development of a new deformable barrier which can be used to simulate car-to-car collisions, the development of at least two dummies with special design features for use in side impact testing, the acquisition of a large bank of data on injury tolerance and several vehicle modifications which have potential for reducing chest injuries. Most of these elements of the program are nearing completion at this time. This work has also provided a basis for full scale tests of pelvis protection. Performance criteria and dummy measurement capability of abdominal injury are under development. The next step will be the development of interior vehicle designs for abdominal injury reduction.
>
> * * *
>
> Prevention of ejection may be possible but even if ejection is prevented there may not be a reduction in level of injury because of the intensity of crashes that produce ejection. 81/

The SAE paper acknowledges that more research work needs to be accomplished in certain areas: "The development of performance criteria that can be used to estimate lateral head impact injuries is in a preliminary stage," and "this research should include a detailed study of side impact accident cases involving head injury." Also, "a research program is necessary to develop countermeasures for abdominal injury." 82/

Three conclusions emerge from a reading of this paper. First, the NHTSA had an obligation to tell the public in its July withdrawal notice exactly what research remains to be done for development of a full scale, dynamic side impact standard. Second, the agency had an obligation to explain why it did not pursue the rulemaking in several stages. For example, it could issue a standard covering chest injuries where the research is virtually complete, and then issue a standard covering head and abdominal injury at a later date. Third, if the agency is serious about its "cooperative" program with the manufacturers, it should at least have obtained commitments to initiate the changes recommended in the 1979 ANPRM (and discussed in the SAE paper describing modifications to the 1976 Volkswagen) to show some progress and good faith toward NHTSA's so-called voluntary motor vehicle safety program. 83/

Pedestrian Protection

The NHTSA first initiated rulemaking for pedestrian safety in 1967, at a time when many cars had rigid hood ornaments and other useless paraphenalia capable of harming pedestrians. Following vocal complaints by NHTSA's first administrator, William Haddon, Jr., M.D., many companies removed the ornaments. But shortly after he left office, the hood paraphenalia reappeared, this time in a more costly but softer, spring loaded form.

Most European countries and Japan have emphasized pedestrian and cyclist protection in their vehicle designs for years. However, this has rarely been a concern in Detroit, even though about 8,000 American pedestrians, mostly children and the elderly, die each year and about 137,000 are injured. Pedestrians, bicyclists and motorcyclists, all of whom would benefit from vehicles manufactured with soft front end exterior materials to reduce the severity of crash injuries, constitute about 27% of the total annual highway fatalities in the United States. 85/

In 1978, NHTSA identified pedestrian protection as a priority rulemaking because of the large number of casualties and the clear opportunity for effective countermeasures. 86/ Research had been ongoing since the early 1970's on pedestrian injury causation and mitigation and the Research Safety Vehicles designed in the mid-1970's demonstrated that substantial injury reduction was practicable. 87/

Using the recent information from the Pedestrian Injury Causation Study (PICS) (which had been initiated to assist with the rulemaking) and other agency data sources, the NHTSA conducted new tests with production and modified vehicles to explore what safety improvements might be effective. It concluded that "[t]he best way of reducing the severity of pedestrian injuries appears to be making vehicle front structures softer." 88/

In January 1981, NHTSA proposed the first of a series of pedestrian safety standards. The first, to be effective on 1985 models, dealt with the knee region, the body area that first collides with the car, at the bumper system. Twenty mph was selected as the impact test speed for the proposal.

Subsequently, the agency indicated it would develop a standard for the upper part of the vehicle grill and front edge of the hood, which collide with the pedestrian's pelvic area. Finally, the agency announced its plans to consider a safety standard for the hood area, which often collides with the pedestrian's upper body and head before throwing him to the ground. The agency calculated that for phase one alone, (the bumper system), the reduction in deaths would be between 323 and 340 in 1994, when the standard is fully implemented. Between 5,000 to 13,000 injuries would be reduced in severity. 89/

Additionally, motorcyclists and bicyclists would benefit from a standard requiring a softer front, although the agency had not calculated any precise numbers. Moreover, the agency Notice pointed out that "equipping a car with softer front ends may reduce the injuries and the damage which the car inflicts when it runs forward into another vehicle." Building "non-aggressivity" into cars is a priority in many European countries. It has been discussed recently in the United States because of the influx of small cars in the market. 90/

The Notice of Proposed Rulemaking explains NHTSA's analysis of the relationship between the proposed pedestrian standard and manufacturers plans to comply with the 5 mph bumper requirements throughout the 1980's (these statements predate NHTSA's reduction of the bumper test speed from 5 to 2 1/2 mph). It also addressed actions to improve vehicle fuel economy in relation to the need to protect pedestrians, and concluded that the goals of pedestrian safety, fuel efficiency, and damage reduction are not incompatible. Nor, the agency concluded, would the requirement for softer front ends for pedestrians in combination with these other priorities necessarily add significantly to the overall vehicle cost. 91/

In another paper prepared for the Society of Automotive Engineers meeting in February 1982, the NHTSA engineering staff analyzed the basis for pedestrian rulemaking in the three areas being considered: pedestrian/bumper interaction; pedestrian/grille and hood edge, and pedestrian/hood area, and identified areas where additional research is needed.

This SAE paper found that bumper design plays a very important role in pedestrian injuries, constituting about 12% of the societal cost of pedestrian injuries:

> Accident statistics indicate that current front bumper systems produce blunt trauma leg injuries in a high percentage of pedestrian accidents. Bumper stiffness also has an effect on the kinematics and impact severity of other body regions . . . bumper stiffness affects the impact severity of the head, chest, and pelvis as well as the direct contact lower leg impact severity for adult pedestrians.
>
> The secondary impact with the roadway may also be affected by bumper stiffness, which influences the throw height of the adult accident victim. 92/

NHTSA's work in pedestrian protection from vehicle impacts is unique. While acknowledging that significant research still needs to be accomplished, NHTSA has define specific areas of harm, identified the injuries that can b afforded protection in impacts under 25 mph, developed dev to measure injury levels in dynamic tests, and conceived a method for faster implementation of part of the pedestrian standard while the more complex problems are further refined. 93/

Because vehicle safety research is expensive and ex imental, it proceeds slowly. Now it appears it will proce a snail's pace, as vital pedestrian research is discontinue slowed down at NHTSA's Safety Research Laboratory. No acti has been taken on the proposed pedestrian standard since January 1981.

Other Vehicle Standards

The NHTSA in the last 19 months has also moved to r valuable standards, and has failed to act on others which a important to car users.

- In the pre-crash area, NHTSA has revoked the "di fields of view" standard that was under development for al 11 years and finally issued in 1980. It would have limited heavy tinting of windshield glass that is dangerous in nigh time driving, particularly for older drivers. In addition, standard would have required some sports cars and some of t sportier sedans (which are overrepresented in crashes) to improve the visibility for the driver by setting limits on maximum permissible obstructions in the driver's field of view. 94/

- NHTSA has failed to take any action on high mount brake lights, now in a proposal form, despite the fact that NHTSA found in a 18-state study evaluating real world experience with these systems that passenger cars with the high mounted light experienced a 53% reduction in rear end collisions. Rear end collisions account for nearly 3 million crashes each year. 95/

- Large trucks remain a major problem in traffic crashes. Truck brakes, the most critical part of these heavy vehicles, should be given priority attention. Since 1975, there has been an increase in truck deaths and injury crash Brakes play an obvious -- and important -- role in mitigating the severe harm caused by these extraordinarily heavy vehicl However, the NHTSA has taken no action on a pending rule for brake stopping distance, and has reprogrammed $425,000 in FY 1981 funds from other truck safety reserach to the belt promotion activities. 96/

In addition, NHTSA has revoked four standards and one advance notice in areas of keen importance for both safety and the consumer's pocketbook:

- The rule upgrading theft protection in cars was eliminated, in spite of a large increase in vehicle thefts (the requirements for theft protection for light trucks and vans in large measure were not eliminated). 97/ A recent estimate of the consumer costs of vehicle theft amount to $4 billion per year, including insurance, consumer losses and damages, and law enforcement costs for over one million cars stolen a year. 98/

- The agency reduced the 5 mph bumper standard to 2 1/2 mph, or a slow walking speed, saying it is not cost effective. 99/ This standard first took effect in 1974 models, and was subsequently upgraded. This issue is being litigated by the insurance industry, which has never agreed with a reduction in the standard.

A key issue in dispute is whether the savings from removal of secondary weight built into the vehicle to support the 5 mph bumper can be counted, since the auto companies will remove this weight only when they undertake a major redesign of a vehicle. Also, in March 1981, the NHTSA published an evaluation finding the front bumper cost effective at 5 mph and the rear bumper at 2 1/2 mph. Clarence Ditlow, Director of the Center for Auto Safety, summarized the reasons for this standard in recent testimony before the Congress:

> Fully 92% of the American public believes this level [5 mph] of protection is a good feature in new cars. And 68% of the public place the value of this bumper protection at $100 or more. The auto companies admit that relaxation of this standard would result in a sticker price decrease of only $30-$35. In the short run, there may be a price increase because the auto companies would have to spend $30-$35 million to retool to put the poorer protecting bumpers on and take the better protecting bumpers off. Even without valuing items such as gas used in getting repairs and estimates for damaged cars and consumer convenience, the old NHTSA estimated the 5 mph bumper standard would save consumers over $400 annually. 100/

- The standard governing speedometers and odometers was also revoked despite the continuing increase in odometer fraud (in the billions of dollars per year) and the safety hazards of older cars bought by unsuspecting consumers. Also, the federal odometer fraud statute is not effectively enforceable without this standard which requires markings on a rolled back odometer, thus alerting the car owner. The Administr in defending this action before the House Commerce Committee March 1982, promised to inaugurate a "blitz" on odometer fr within 60 days. We have heard nothing further since. Co on the speedometer standard that required a top speed displa of 85 mph and highlighting the 55 numerals are contained in "55 Miles Per Hour" section of this report. Rescission of standard was estimated by NHTSA to save $1.00 to $1.50 per vehicle. 101/

- Finally, low tire pressure systems are important both safety and fuel efficiency, and according to NHTSA wo cost the automobile consumer about only $5.00 per car. 102/ Nevertheless, the Advance Notice of Proposed Rulemaking and associated research were summarily dismissed earlier this year, and some of the research funds were reprogrammed to the belt promotion program.

In 1976, Malcolm Lovell, then the director of the Rubber Manufacturers Association and now Undersecretary of Labor, testified that tire underinflation cost consumers $4 million per year. 103/ In March 1983, in testimony before Congress, Clarence Ditlow also commented on the loss of benefits from elimination of this potential standard:

> According to the Tire Industry Safety Council and the Rubber Manufacturers Association (both tire industry trade associations), 25% of the cars on the road have underinflated tires. Inflating these tires to the proper pressure could save 41 million barrels of petroleum each year and improve gas mileage by about 5% which would save each motorist about $30 per year. An EPA study of tire pressure in six cities confirmed the problem of underinflation may even be worse by finding that over 60% of vehicle tires are underinflated with an average underinflation of 4.5 psi. Over the ten year useful life of a car, consumers could save $300 from improved fuel economy alone due to proper inflation of tires. In addition, proper tire inflation would increase treadwear and reduce accidents due to underinflation. Firestone Tire and Rubber Company is on record before this Committee that over 4 psi underinflation in a radial tire is riding on the edge of danger. 104/

SAFETY BELTS

Shortly after the Department of Transportation announced on October 23, 1981, that FMVSS 208, the automatic restraint standard, would be rescinded, it formally announced the initiation of a new $9.6 million campaign to increase safety belt usage. 1/

The rationale was obvious. The Reagan administration is committed to revoking regulations, at any cost, even if the regulations save lives, are cost beneficial, and have strong public support. Auto safety standards meet all these criteria. But in order to gloss over its callous disregard for public safety, the administration needed to speak positively about highway safety. Thus, the safety belt promotion program was born.

The first important question to ask is: whether the seat belt use program is largely a waste of time, money and agency resources. Should the federal government expend scarce resources to get people wearing belts?

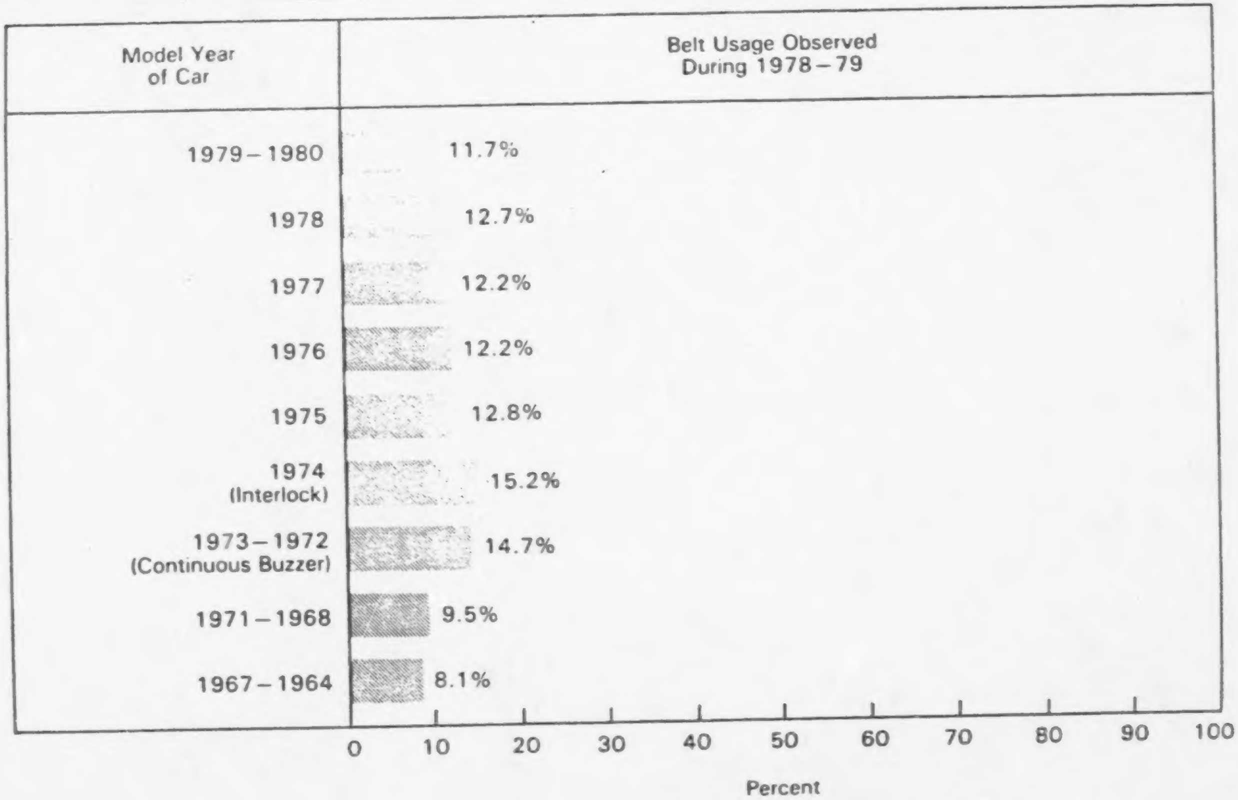
The answer is that over the long run, a carefully developed program might increase belt use if it corrects the conditions that research and scientific analysis have shown deter people from wearing belts. It is possible to change perceptions and personal habits in areas such as excessive eating, drinking and smoking, and for purposes of this discussion, belt use. But, as Benjamin Kelley, Senior Vice President, Insurance Institute for Highway Safety (IIHS), recently stated:

> A less encouraging example of the behavior change approach involves seat belt use. Government and business have invested years of effort and millions of dollars in trying to increase belt use by cajoling, educating, persuading, and otherwise influencing motorists, and also have attempted without success to promote passage by states of mandatory seat belt use laws. The upshot: only about 10 percent of motorists are using their belts. 2/

Absent a crisis, such as the 1973 oil embargo that changed driving and car buying habits, this kind of behavioral change takes a number of years. Significant environmental changes are also needed to encourage a different mode of behavior.

Consistent with this analysis, NHTSA inaugurated a major effort to increase child restraint use during the late 1970's. It promoted laws requiring the use of child restraints, encouraged health professionals like pediatricians

Safety Belt Usage by Model Year



Data Source: Safety Belt Usage Among Drivers – B.M. Philips, Opinion Research Corporation, May 1980

Figure 13

to become actively involved, issued standards for child restraint crash performance. In the course of protecting their babies with child restraints, parents become involved in thinking about the value of automotive restraints for the whole family. More importantly, they start to form new habits for the younger generations.

But there are important questions that must be asked: how many people's behavior can be changed? How quickly? At what cost, in lives and dollars? And, what are the most effective and efficient programs for achieving this social change?

According to the most recent NHTSA-sponsored research current belt use in the United States is observed to be 11.5%. This is the most recent cumulative figure for 12 or more months. There are small variations from month to month. 3/ Since the advent of the safety belt ignition interlock system in 1974 model cars, when belt use reached 15.2%, the number of people using safety belts has steadily declined. (See chart.) 4/

Independent public opinion polls conducted by Gallup over the years show that people claim they wear belts more often than they do, but even these affirmative responses have decreased. Gallup's most recent poll finds 17% of the public responded "yes" to the question: "Thinking about the last time you got into a car, did you use a seat belt?" In 1977, 22% said "yes," and in 1973, 28% said "yes." 5/

In resisting government requirements for improved vehicle safety performance, the auto manufacturers have long argued that we should get car occupants to wear the belts they have already paid for, and that this would be the fastest route to saving lives. But their argument is completely incorrect. Automotive restraints would increase protection of occupants much faster in the short run than encouraging owners to use already installed manual belts.

For 18 years, every car sold in America has contained lap belts; shoulder/lap belts have been standard equipment for 15 years. Despite a number of promotional efforts, belt usage in the U.S. remains at about 11%. By comparison, if automatic restraints were installed in all new 1983 cars this fall there would be a big jump in overall occupant restraint use. If only half of the 1983 cars used automatic occupant restraints (the new vehicles would constitute 8% to 10% of the vehicles on the road at the end of the model year), there would be a remarkable 4% to 5% increase in total belt usage. Once automatic restraints were installed in 1984 cars, there would be another 4% to 5% increase, and so on for each additional model year.

There is nothing incorrect about NHTSA working to increase belt use. Indeed, it has been doing this for many years. [6] However, it is ridiculous for the U.S. Department of Transportation to make such a speculative long-term effort the cornerstone of its highway safety program. Safety belt campaigns take a long time to show results, are very costly, and in fact, rarely show much payoff.

If the Administration were serious about reducing deaths and injuries, it would develop a national plan that considers safety belt use in conjunction with the whole vehicle safety problem. But the administration has shunned key strategies needed for a successful program to prevent death and injury on the highway. These strategies are: (1) development of measures to provide protection against the "second impact" in a collision -- when unrestrained occupants strike the vehicle interior; (2) improvement in the reliability and effectiveness of safety belts; (3) improvement in comfort and convenience of safety belts; (4) promotion of automatic safety belts, which have already been installed a an option in more than 400,000 vehicles.

(1) Interior Compartment Protection. When an automobile strikes something, an unrestrained occupant begins t collide with the interior of the compartment only about 1/20 of a second later. This is the so-called "second collision." Some of the most hostile parts of an automobile are in front of the driver and front seat passengers: the steering wheel, the instrument panel, the windshield, and its frame.

GM has recognized the importance of minimizing the impact of the second collision on car occupants. During a day long briefing last June for the media on crash testing, Mr. Alex C. Mair, Vice President and Group Executive in charge of GM's technical staffs, outlined the company's three main objectives in its vehicle safety programs. One official priority is collision protection for drivers and passengers. Mr. Mair stated:

> This objective concentrates on designing body panels that crush at a controlled rate and providing passenger compartments that are "forgiving."

Furthermore, he noted:

> In a single car accident -- say running into a tree, pole or barrier -- the smaller car stops more abruptly because there is less crush space in front of the passenger compartment . . .

Explaining there are physical laws which no one can change, Mr. Mair noted that, "[c]utting the weight in half will about double the overall risk of injury." [7]

In their February, 1982 paper on "A Search for Priorities in Crash Protection," three top NHTSA engineers explained the importance of a forgiving interior compartment with a belt use program:

> The use of occupant restraints is undoubtedly the single most effective measure for occupant crash protection. However, in spite of a potential full effectiveness of 50 percent when used, today restraints have an overall net effectiveness of about 5 percent. . . Thus, unless momentous increases in belt use are anticipated in the foreseeable future . . . improved protection for unrestrained occupants, should receive a higher priority. 8/

Although the NHTSA has not identified a specific goal, agency personnel have suggested that a 20% increase in safety belt usage over current use within three years would make the program a success. Additionally, GM Chairman Howard Kehrl, in discussing the seat belt program, stated:

> [w]hile studies show that only about 10% of all motorists now wear their seat belts . . . up to 45% of the people wear belts at least occasionally. The potential for increasing belt usage . . . is mainly in converting occasional users into consistent ones. 9/

At a minimum, this still leaves more than half of all occupants without adequate protection. If the administration does not like airbags, what "forgiving" alternative, in GM's words, will it offer in its place?

The answer is nothing. No steps have been taken to improve steering assemblies. The lower dashboard area still contains sharp knobs. Many basic interior areas still need improvement: side structures and padding, padding on the pillars and header area, and protection from the interior windshield. Ben Kelley, Senior Vice President, Insurance Institute for Highway Safety (IIHS), has complained about the failure to use available safety technology:

> [t]he knowledge and technologies have long been available to very greatly increase the performance of automobiles in protecting the people inside them from fatal or serious injury in crashes. But the gap between the technologies, on the one hand, and their application in new car design and manufacture, on the other, remains disturbingly wide. Until the gap is removed, many thousands of Americans will die and

> hundreds of thousands will be badly hurt each year, because the cars they crashed in were, from a safety standpoint, *obsolete*. 10/

(2) *Safety Belt Crash Performance.* While the Department of Transportation is pressing for belt use, it is ignoring the findings in NHTSA's New Car Assessment Program (NCAP). This program found that belts in many current production cars cannot protect occupants in crashes of 35 mph or more and could unnecessarily cause serious injury to occupants.

In a chapter of the NHTSA report," Small Car Safety in the 1980's," published in December, 1980, agency technical staff reported the following:

> In many of the NCAP tests, the production restraint systems allow excessive forward motion of the vehicle driver and passenger. . . This excessive forward motion is primarily due to two factors. The stretching of the belt webbing and the tightening of the belt on the retractor spool (spool-out) may combine to allow the occupant to move forward in the compartment and to strike surfaces (steering controls, dash, etc.) with sufficient force to exceed the injury criteria.
>
> Restraint system modifications which might be made to improve the safety performance to 35 mph include the following:
>
> a) Snubber or belt webbing clamp which would prevent excessive movement of the occupant into the steering wheel, windshield, or instrument panel.
>
> b) Modification of the emergency lock-up retractor mechanism to lock the belt at lower acceleration levels (also to restrain the occupant earlier in the crash).
>
> c) Modification of the retractor spool in order to provide less slack in the belt on the retractor spool.
>
> None of these modifications would cost more than $5 per vehicle. Since these modifications are "bolt-on" additions to or substitutes for existing equipment, the changes could be made with little delay. 11/

(3) *Comfort and Convenience.* The underlying presumption of the administration's seat belt program is that Americans do not wear seat belts because of laziness. It

has chosen to ignore studies indicating there are other major factors influencing belt use. A 1981 public opinion poll by Tarrance and Associates showed the three reasons most often mentioned by non-belt users are discomfort, inconvenience and forgetfulness. 12/

The administration is doing nothing to improve the quality and comfort of seat belts to induce use. In fact, on April 6, 1981, NHTSA announced it was eliminating most of the provisions in the rule that set performance standards for automatic safety belts in cars and for manual and automatic belts in vans and light trucks. (49 C.F.R. § 571.208) The standards would have prevented the installation of inconvenient and uncomfortable belts (it did not cover manual 3 point belts since these were at that time being replaced by automatic restraints). 13/

In the 1981 Car Book, as part of the total evaluation of automobiles, the NHTSA studied consumer reaction to safety belts in 1981 cars. Safety belts were examined and tested against specific criteria: How easily could a belt be used? Was it accessible? How good was the overall fit? More than half the participants experienced problems in every car tested in the subcompact and compact categories. In the intermediate and large car categories, only the Mercedes models, the Buick Electra and the Cadillac De Ville had relatively few problems. It goes without saying that these models are not the most affordable among lower and middle income groups. 14/

(4) Automatic Safety Belts. The safety belt program currently under way focuses solely on manual belt use despite the availability and popularity of automatic safety belts (primarily in the VW Rabbit). In the promotional materials being used for the campaign there is only one document addressing automatic safety belts. Most references to automatic belts have been deleted from agency films and literature. A survey by Opinion Research Corp. in 1981 of VW and Chevette owners showed that among owners who reported disliking safety belts, 74% of the VW owners and 44% of the Chevette owners preferred automatic belts over manual belts. When asked about belt usage on their most recent ride, 89% of the owners of VW's with automatic belts and 70% of the Chevette automatic belt owners indicated they had used the belt system. This compared to 48% of the VW owners and 31% of the Chevette owners who had manual belts. 15/

In addition to the deficiencies in the overall belt use program, the effectiveness of this approach has met with skepticism. Several experts in hearings before the House Subcommittee on Telecommunications in the Spring of 1982 testified about the doubtful effectiveness of a safety belt campaign. They cited similar efforts over the past 1 years that have not increased safety belt usage for any sustained period of time. 16/ In addition, the House Appropriations Committee in its August 19, 1982, report on the NHTSA appropriations bill stated that it had "deep reservations about the ultimate effectiveness of the curr seat belt usage programs." In a letter to the administrat concerning the NHTSA's request to reprogram funds, the Chairman of the subcommittee stated:

> The Committee is approving with some reluctance your request to reprogram $6.98 million of FY '81 and FY '82 funds for your newly developed Safety Belt Usage Program.
>
> Although we strongly endorse the worthy goals of your program, we cannot ignore the results of similar public education programs of past years which have shared the ambitions of your new program, but have done little to persuade the public to "buckle up." I am not certain that your "network" approach will prove to be the critical difference in selling seat belts to the public... 17/

The Insurance Institute for Highway Safety (IIHS) reviewed more than a dozen voluntary campaigns worldwide since 1968. In all but two cases, there was no effect on belt usage. In the two exceptions, Sweden and Ontario, Canada, belt usage increased only 10% and 2% respectively. Furthermore, the IIHS study noted a finding by the Department of Transportation in 1977 that such buckle-up campaigns in the United States and foreign nations have not been successful in increasing voluntary belt usage for any sustained length of time. 18/

Since 1968, private safety groups, the automobile industry, and the government have spent millions of dollars to encourage safety belt use. The many campaigns have not produced any sustained increase in belt use. In 1977, Motorist Information Inc., an organization founded by the four domestic automobile manufacturing companies, spent $1.75 million for a safety belt campaign that focused only on Detroit and surrounding towns. A Department of Transportation analysis of this extensive public relations program concluded that there was "no response" to the media blitz. In fact, in one of the cities, belt use declined by one percent. 19/

In March, 1980, the National Academy of Sciences presented a study to DOT outlining its investigation of how to encourage safety belt use among drivers and passengers.

The principal finding about previous efforts was that "no single program is likely to work." 20/

In rejecting FMVSS 208, the administration stated that the usage rate of automatic seat belts at which societal costs and societal benefits become equal is 24.4%. This represents a 13.4% increase over current belt usage of 11%. 21/ There has never been any public information campaign on seat belts that has come close to achieving this level of use. Nevertheless, the administration touts its safety belt program as the "life-saving" substitute for automatic crash protection.

The only government action that has ever resulted in significant belt use has been mandatory seat belt laws similar to those in some of the Canadian provinces, France and Australia. 22/ In the mid 1970's, 27 state legislatures in the U.S. had mandatory seat belt bills pending. But ostensibly because of public opposition to this approach, not one state ever enacted a law. 23/ By contrast, numerous public opinion surveys indicate widespread support for automatic crash protection. 24/ (See Chapter 1.)

Is the Reagan administration's program so different from previous safety belt campaigns? According to Administrator Peck (in testimony before the House Transportation Appropriations Subcommittee and subsequent correspondence sent to the Subcommittee Chairman), the success of the safety belt campaign lies in the "network approach." For example, the plan calls for taking the message to the people through private sector groups. 22/

A 1980 NHTSA study found this approach virtually futile. The study examined employer campaigns to increase the safety belt use of their employees. The research company conducting the study, Opinion Research Corp., originally contacted 23 major corporations. Despite some initial interest and enthusiasm, however, only two companies, Allied Chemical Co. and American Cyanamid Co., participated in the project. After the nine-month program was over, observed belt use showed no statistically significant change. The study found that corporate safety directors are reluctant to become involved in safety belt education programs, although they recognize the potential benefit. Even if safety directors did initiate a program, there was no significant increase in belt use among employees. 23/

Before the House Appropriations Subcommittee, the Administrator testified that unlike past failures to increase belt usage, this effort was going to use groups like the insurance industry and safety community to deliver the message. These groups, he reasoned, would to be a more credible source of information than the government. He stated that according to surveys, the second most persuasive source of information is the insurance industry: "[I]f the insurance industry is behind it, since we are gambling dollars and cents, it must in fact mean that they [safety belt promotion programs] will work." 27/

It is unfortunate for the American public that the administrator's faith in the insurance industry is so selective. He chose to ignore the insurance industry's steadfast support for automatic crash protection. Its support is based not on a public relations "theory" but on hard facts accumulated after years of conclusive research and tests. In fact, representatives from the insurance industry are generally unenthusiastic about participating in another campaign they believe will not net any appreciable, long term increase in belt use.

While encouraging belt use is one element of an overall strategy to reduce deaths and injuries on our highways, it should not be the primary approach this administration pursues. Behavioral changes, as professionals who work with smokers and alcoholics know, primarily occur over time.

The question here should not be whether we can change the behavior of 100 million motorists each time they buckle up -- some 100 billion times a year -- for the rest of their lives. Rather, we must ask why the NHTSA should tolerate thousands of traffic fatalities that can be prevented through more cost effective, short term solutions.

But this is exactly what the Reagan administration has done. It has reallocated staff, assigning 20 people to the safety belt effort, while depleting critical areas of high payoff, particularly the scientifically based endeavors in the agency. It has reprogrammed fiscal year 1981 and 1982 money away from already underfunded programs to pay for the belt promotion effort. 28/ And, as often happens in a so-called "new initiative," it has overpromised. The agency is far behind the ambitious schedule it sent to Congress for achieving designated short term objectives for the program.

Many members of Congress have criticized the move, wondering what it can actually achieve. Senator Bob Packwood, Chairman of the Commerce, Science and Transportation Committee and the Chairmen of the four subcommittees overseeing the NHTSA (Rep. Timothy Wirth and Senator John Danforth of the House and Senate Commerce Committees, and the late Rep. Adam Benjamin and Senator Mark Andrews of the House and Senate Transportation Appropriation Subcommittees) are particularly skeptical. Several months ago they jointly asked the General Accounting Office to prepare an analysis by November, 1982 of the efficacy of the belt promotion program. 29/

The rhetoric of this administration's seat belt program is no substitute for the reality of automatic crash protection. Chairman Tim Wirth, Subcommittee on Telecommunications, Consumer Protection and Finance, summed it up at hearings on automatic crash protection when he said:

> Given that Congress specifically set out what it expected NHTSA to do, one thing is abundantly clear -- we did not give NHTSA a choice as to whether or not to promote safety. Congress required the agency to establish safety standards to save lives, to reduce injuries and to meet the need for motor vehicle safety.
>
> Congress has specifically rejected the idea of letting automakers decide whether or not to make cars safer. Furthermore, Congress has rejected trying to modify the behavior of drivers as the sole safety initiative in favor of a systematic, technological approach designed to combat deaths and injuries.

MOTORCYCLES

It is clear that a seat belt public relations program is no substitute for the automatic crash protection standard nor is it a substitute for other lifesaving programs. While NHTSA is spending millions of dollars trying to increase seat belt usage with slogans, songs, television commercials, pamphlets, comic books and seat belt sabbaths, they are ignoring the lifesaving benefits of other traffic safety programs that have a proven track record in reducing deaths and injuries. Two such programs are motorcycle safety and the 55 mile per hour enforcement program. Law enforcement and public information in these areas have saved thousands of lives every year.

Last December NHTSA issued a press release reporting the results of the 1980 Fatal Accident Reporting System (FARS). The numbers were staggering -- 51,077 lives lost. Of this total 4,960 were motorcycle riders. By 1981 the number of motorcycle deaths exceeded 5,000 -- or 10% of all traffic fatalities -- even though the motorcycle population is only 3.5% of all vehicles. 1/

Motorcycle and moped fatalities have been on an upward trend since 1975. Their portion of the nation's highway death toll has increased from 7.2% in 1975 to over 10% in 1981. Individually, motorcycle deaths have increased 56% since 1975 and moped fatalities have increased 218% since 1977, the first year moped data was available. 2/

The chance that a motorcyclist will be injured in an accident is also very high. In fact, it is 10 to 15 times higher than for other motor vehicle users involved in crashes. Additionally, motorcyclists' injuries tend to be more severe than those suffered by other crash victims. 3/

The growing increase in motorcycle accidents has produced sharply increased government disability payments and insurance claims. A report by the Insurance Institute for Highway Safety noted:

> The injury burden of motorcycle crash-related carnage is falling predominantly on younger males. The economic burden, however, is falling not on the dead and injured but principally on those segments of society -- taxpayers and insurance policy holders -- that must support the extensive emergency, hospital and rehabilitation resources required to care for the resulting brain damaged, paraplegic, and quadriplegic cyclists. 5/

Medical costs are higher for unhelmeted riders because their hospital stays are longer, according to an analysis of hospital cost data in six states in the 1980 NHTSA report to Congress on the effect of the repeal of the motorcycle helmet use laws. And since many injured cyclists are uninsured, the cost to taxpayers is significantly higher. Out of 71 motorcyclists hospitalized in a Denver, Colorado study only 38% were covered by commercial insurance or workmen's compensation. Fifty-nine percent of the unpaid bills were borne by taxpayers. In a study conducted at the Maryland Institute for Emergency Medical Services, the average cost of treatment of motorcycle injuries was just under $10,000 in 1977. A subsequent study by this same group showed the cost rising to $11,038 in 1978. In the study of 1977 motorcycle accidents, 40% of the patients did not pay their bills; in the 1978 analysis 25% were uninsured. In both years NHTSA reported that the combined unpaid bills in these two studies amounted to $433,200. 5/

There appears to be an inverse relationship to the problem and the administration's response. As the number of deaths and injuries due to motorcycle and moped use dramatically increases, the government's commitment to tackling this national problem has declined in the past 20 months. In fact, in order to fund the seat belt promotion program (whose effectiveness is questionable), the administration diverted money from the motorcycle safety program -- $200,000 in FY '81 and $80,000 in FY '82. 6/ As a result there are virtually no new research and development activities planned in the area of motorcycle safety.

Furthermore, ongoing programs have been curtailed and cancelled altogether. The dismantling of motorcycle safety programs has occurred despite a 1980 NHTSA report which stated that a significant factor contributing to the 53% climb in motorcycle deaths between 1975 and 1979 is :

> [t]hat the development of comprehensive motorcycle safety programs in the states had not kept pace with the growth in motorcycle use and therefore should receive greater emphasis in the development of overall state highway safety programs. 7/

The tragedy of the administration's decision to quit this program is that NHTSA has already established a substantial research base, beginning in 1976, on the motorcycle safety problem. Drawing on scientific research and faced with a problem that continues to grow, NHTSA is prepared, but not willing, to take the next critical steps: designing and implementing workable solutions.

Based on several studies of motorcycle accidents and working in cooperation with state governments and motorcyclist groups, NHTSA reseach has identified three major safety problems associated with motorcycles:

- High Injury Potential. One-half to two-thirds of all motorcycle fatalities involve injury to the head. 8/ If a helmet is worn, the probability of a head injury is 19% compared to 34% without a helmet. Lower extremity injuries occur in 35% to 42% of all injuries and create serious long term disabilities for the victim. 9/ Consequently, the severity of motorcycle accidents can be greatly reduced through the use of protective equipment. The question of whether injuries could be reduced with motorcycle crash bars has never been fully investigated by the agency.

- Operator Ability. Inexperience and lack of ability is a major factor in motorcycle accidents. A study in 1976 by the University of Southern California (USC) indicated that 39% of the motorcycle operators involved in accidents had been driving for less than a year. 10/ Introductory motorcycle courses have generally not been available to cyclists who want to learn to ride. Studies indicate that motorcycle training for novices could be an effective countermeasure to accidents. 11/

- Conspicuity. Motorcycle accident studies show that the failure of motorists to detect and recognize motorcycles is a causal factor in 65% of all accidents involving cars and motorcycles. 12/ In a typical collision between a motorcycle and an automobile, the car driver did not notice the motorcycle prior to the crash or in time to avoid the crash.

Although motorcycle deaths comprise 10% of all traffic fatalities, and motorcycle and moped use is rapidly growing as a means of inexpensive transportation among teenagers and young adults, the agency is ignoring the problem.

Originally, the NHTSA promoted a model state law that required the use of motorcycle helmets. The legislation was based on scientific evidence showing that a head protected by a helmet could survive far greater blows than an unprotected head. By 1976, almost every state had enacted such a law. Then Congress revoked the Department's authority to penalize a state without a helmet law. (The DOT was authorized to withhold all of a state's highway safety funds and 10% of federal highway construction funds if it failed to comply.) Subsequently, 28 states revoked their statutes. 13/

The agency, recognizing the seriousness of this unfortunate trend, measured the effects of these revocations. An extensive report was sent to Congress in 1980 documenting the enormous lifesaving benefit of helmet laws. 14/ Within a year of dropping the requirement, motorcycle deaths had increased by at least 1,000. By 1980 there were 2,100 more motorcycle deaths than in 1976, with virtually no increase in motorcycle registrations.

In the four years after DOT's penalties were revoked, motorcycle deaths nationwide rose 46%. It was disclosed that unhelmeted motorcyclists are twice as likely to incur head injuries and three times more likely to die of head injuries.15/ As a result of NHTSA research indicating the dramatic rise in deaths and injuries among non-helmeted riders, as well as NHTSA advocacy of helmet use, only one state has repealed helmet use laws since 1979. Another state, Louisiana, has reinstated the helmet requirement.

Unfortunately, research activity on motorcycle safety is now at a virtual standstill. In 1980 the Department of Transportation spent $2.4 million on motorcycle safety. In 1981 it spent $3.9 million. This year, 1982, a mere $142,519 is being spent to promote helmet use. The Reagan Administration does not favor any federal role in encouraging the states to reenact these great livesaving laws. Apparently, "the right to life" does not extend to young males between the ages 15 and 30.

During the past year the administration has also taken the following actions:

- Dropped motorcycle safety as a priority project for funding under the highway safety grant program -- even though an internal 1982 NHTSA document showed that it was one of the most cost effective programs. In NHTSA rulemaking papers identifying the types of highway programs that are the most cost effective, motorcycle safety was not included in the top six programs. Yet an internal planning document which evaluated completed motorcycle safety projects, showed that significant reductions in the number and severity of motorcycle accidents are in fact being obtained. Furthermore, a rating of NHTSA program areas listed motorcycle safety as having a "high" degree of program potential. 16/

- Cancelled a contract to promote helmet use through the use of radio and television advertisements.

- Cancelled a program to upgrade and improve a motorcycle operators manual for distribution to the states. The cancellation was made despite findings of the need to provide cyclists with better training. Agency personnel had already developed a work statement and received proposals to undertake the job.

- Cancelled the revision of a motorcycle skills test for state use. Unskilled motorcyclists are much more likely to be involved in an accident than skilled motorcyclists -- hence a skills test. The original prototype had been developed in 1976. Recent research findings and field experience confirmed that many of the skills tests were inadequate. Again, the staff had already prepared a work plan and received proposals to complete the project.

- Reallocated $280,000 to the seat belt usage program previously designated for development of educational materials to increase helmet use and training information for high risk cyclists. 17/

- Rejected the motorcycle safety program contained in the 1980 five-year highway safety research agenda (Sec. 403), which had been prepared at the request of the Senate Appropriations Committee. This plan took over a year to prepare, and drew upon the contributions of state and local governments, safety experts, and the general public. As a result of the administration's rejection of the five-year plan, the following activities have been eliminated: 18/

  (a) Continued study of the factors influencing safe motorcycle riding performance and the causes of motorcycle accidents;

  (b) Development of a model operator licensing system for entry level motorcyclists;

  (c) Development, test and demonstration of moped operator countermeasures;

  (d) Development and test of conspicuity countermeasures;

  (e) Testing and demonstration of a motorcycle rider course;

  (f) Evaluation of motorcycle operator licensing systems;

  (g) Development, promotion and evaluation of programs to increase helmet use;

  (h) Assistance to states in implementing motorcycle safety programs;

- Despite research findings that motorcycle deaths and injuries can be greatly reduced through protective equipment, such as crash bars, the agency plans no research or rulemaking activity into the feasibility of any devices to protect cyclists.

- The agency has discontinued all research into methods to improve the visibility of cyclists even though conspicuity is a causal factor in 65% of motorcycle accidents involving automobiles.

55 MPH SPEED LIMIT

In 1974, in response to the oil embargo, Congress established 55 miles per hour as the national maximum speed limit. Not only did the 55 mph speed limit become an important energy conservation measure, it unquestionably became one of the most powerful influences in reducing traffic deaths and serious injuries. Congressman James Howard (D-NJ), Chairman of the House Public Works and Transportation Committee and one of the original sponsors of the national speed limit, stated:

> One of my principal objectives in 1974, because of the oil embargo, was to conserve gasoline, and we have saved more than 3.4 billion gallons of gas each year. But, I take greater satisfaction in the fact that more than 50,000 of my fellow Americans are alive today who would have been victims of fatal highway accidents without this law.

Since imposition of the 55 mph speed limit in 1974, DOT conservatively estimates that over 54,000 lives and 28 billion gallons of gasoline have been saved. 1/ As cars become smaller, the life saving benefits of the 55 mph speed limit become more critical. A NHTSA report in 1980 stated:

> The increasing proportion of smaller cars in the vehicle population lends even greater importance to maintaining the slower, more uniform flow of traffic which results from the 55 mph National Speed Limit. 2/

In 1977 the American Epilepsy Foundation praised the 55 mph speed limit as "the single most effective medicine for new cases of epilepsy because it has reduced the number of head trauma injuries resulting from automobile injuries." 3/ Dr. Simon Horenstein of the St. Louis School of Medicine, noted that, "spinal cord injuries are down 60 to 70 percent as a result of the 55 mph speed limit." 4/

The decline in death and injury is so significant that the New England Mutual Life Insurance Company attributes an increase in the average life span of Americans these past five years to the effects of the 55 mph speed limit. 5/

Although the 55 mph speed limit has been an extremely effective life-saving measure and enjoys widespread public and Congressional support, the Reagan Administration has publicly called for elimination of the 55 mph limit, largely as a political gesture to western states. However, as reported in a UPI story, the administration finds itself in the uncomfortable position of supporting repeal of a measure that is credited with saving thousands of lives. 6/ Congressman James Howard, who has fought successfully to retain the 55 mph speed limit, recently noted:

> It would be a tragic piece of folly to repeal the one federal law that demonstrably saves human lives simply because a minority of the nation's motorists find it "boring" to drive at a reasonable speed.
>
> As I have often said, "Better bored than dead."

A DOT report on the benefits of the national speed limit stated that removal of the 55 mph speed limit or substantial weakening could result in as many as 20,000 additional motor vehicle crash deaths and hundreds of thousands of nonfatal accidents over the next five years. 7/ Furthermore, the public supports retaining the speed limit. Countless national and local opinion polls conducted by the government as well as Gallup and NBC indicate a strong majority of Americans (about 75%) support 55 mph. 8/ The most recent Gallup poll, dated September 6, 1982, finds that "[d]espite mounting pressure in the Congress to repeal the national 55 mile per hour speed limit, the public -- including persons driving in all regions of the country -- voted overwhelmingly to retain the limit. 9/

In addition, the speed limit is supported by the organized trucking industry, police officials, medical experts and insurers. 10/ Secretary Drew Lewis has even received correspondence from the Republican National Committee Women, expressing full support for retention of the 55 mph speed limit. Mr. Duane W. Acklie, President of Crete Carrier Corporation and a former opponent of the speed limit, recently wrote to Secretary Lewis:

> Immediately after the speed limit was reduced, we started noticing a substantial reduction in accidents. Prior to the time of the 55 mph speed limit we were paying out 2.3% of our gross income for insurance and that figure today is only 1%. . . I know today I made a mistake in objecting when the 55 mph speed limit was imposed. We have had the experience and we would suggest to you that increasing the 55 mph speed limit will result in additional fuel consumption and additional fatalities on the highways.

Rather than heed this wisdom, the administration is looking the other way as states lessen the penalties for motorists caught speeding. The most egregious example is Nevada, which only imposes a $5.00 "energy wasting" fine for speeds between 55 and 70 mph. Federal Highway Administration lawyers have stated that the fine is consistent with federal law. 11/ Arizona's fine is $15.00 for motorists who exceed the 55 mph limit up to 65 mph. Connecticut violators do not have to go to court if they do not exceed 70 mph on an interstate or 60 mph on secondary roads. In Utah, state officials cannot report tickets to insurance companies if violators on freeways are driving less than 65 mph.

While the administration shrugs at these evasions of the law, NHTSA has discovered that the probability of fatality doubles as crash speed increases from 45 mph to 60 mph. It doubles again as speed increases from 60 mph to 70 mph. 12/

Because the safety benefits and fuel savings of the 55 mph speed limit so overwhelmingly justify its retention, the administration has attempted to change the focus by arguing that the speed limit is a "states rights" issue. This is a preposterous argument. We are an extremely mobile society. There is a clear need for consistent traffic laws, uniform highway design and construction standards, and uniform highway signs to facilitate interstate travel for the American public. Since the 1950's there has been a trend toward achieving national uniformity in traffic laws and regulations. In 1966, Congress passed the Highway Safety Act to establish uniform safety standards in areas such as pedestrian safety, driver licensing, drunk driving enforcement, vehicle inspection, and rules of the road. The 55 mph speed limit continued this trend toward national uniformity in 1974. 13/ Two years later, "right turn on red" was made uniform throughout the country. 14/

Congress has signaled its strong intention to keep the 55 mph limit and in fact has taken action to ensure vigorous enforcement. Congressman James Howard included in the 1981 highway authorization bill a provision requiring that $20 million of federal funds appropriated for the state and community highway safety grant programs (23 U.S.C. § 402) be used to enforce the 55 mph speed limit. In response to "slap on the wrist" fines in states like Nevada, Rep. Howard has included in this year's highway bill a provision that would require NHTSA to withhold highway funds from states whose fines did not serve as substantial deterrents to speeders.

Despite the Congressional mandate for strong enforcement, the administration has resisted giving money to the states to enforce the national speed limit. Yet, without federal aid, some states and highway safety groups fear the states may not be able to adequately enforce the law. And if they fail to meet mandated levels of compliance, states can lose 10% of their federal primary, secondary and urban highway funds. Col. Grover Garrison, an official of the International Association of Chiefs of Police (IACP), noted in Congressional testimony last year that "a serious decline in compliance will be realized" if enforcement money is eliminated. 15/

Unfortunately, Garrison's prediction has already come true. For the first time since imposition of the 55 mph speed limit, several states are not likely to meet the required compliance levels. According to DOT officials, it is expected that Nevada, North Dakota and Massachusetts will be in violation of the law. It is possible that Vermont, Wyoming and Oklahoma will also fail to meet the compliance levels.

Besides winking at the token fines for speeding, the administration has taken other actions to signal its opposition to 55 mph. It revoked the speedometer standard that highlighted 55 mph on speedometers and limited the top speed notation to 85 mph. The agency has also made it difficult for states which support 55 mph to enforce the law. Historically, NHTSA's role in assisting the states has been to conduct research in order to identify new enforcement techniques to improve the efficiency of enforcement and provide technical assistance. In FY '79 and FY '80 the NHTSA budget included $47.6 million and $36.1 million respectively for 55 mph enforcement. But the Administration's revised FY '82 budget request and the FY '83 request included no funds for 55 mph enforcement. In addition, the states can no longer depend on federal support for the following programs.

- NHTSA cancelled a $1 million, three-year project to deter speeding by using a public information program in conjunction with enforcement strategies. This innovative proposal was sent out for bids but withdrawn shortly thereafter.

- NHTSA cancelled the third and most important part of a study examining automated speed monitoring equipment to deter speeding. It is estimated that U.S. enforcement techniques for speeding violations are 20 years behind our European and Japanese counterparts. Because U.S. equipment is not as sophisticated as that in other countries, state enforcement efforts are labor intensive and constitute a drain on the limited resources of state and local police. Phases I and II of this project identified and assessed some possible applications of European and Japanese technology.

  The preliminary results indicated the equipment to be highly effective and of potential benefit to numerous states. Phase III consisted of actual field tests;

sites had already been identified. But as a result of the decision to cancel the project, states will not be able to test the new technology even though the federal government already owns the equipment.

- NHTSA plans to terminate the "state technical assistance teams." This program helps states develop cost effective techniques to enforce the 55 mph speed limit. Working through the International Association of Chiefs of Police (IACP), the NHTSA established an extremely successful program to assist states that requested help in developing and implementing 55 mph enforcement programs. At the request of individual states, the IACP, with NHTSA funding, organizes a team of professionals to help a state find solutions to its enforcement problems. Police officers from states with successful 55 mph programs work with NHTSA technical staff to analyze data, review radar techniques and create public information programs to enhance awareness of 55 mph. These public information programs work effectively in conjunction with enforcement activities to produce payoff in those states. New Mexico, Louisiana, Arizona and Texas have all benefitted from this program. The administration has decided to terminate funding for this program at the end of this year.

- All of the following research activities have been cancelled as a result of NHTSA's plan to disregard 55 mph: 16/

(a) Development of public information and education programs for improved enforcement including:

  - Assessment of compliance impact and cost benefits of varying levels of enforcement;
  - Identification and assessment of other current countermeasures and development of new ones;
  - Evaluation of state enforcement procedures;
  - Transfer of technical assistance to state enforcement agencies.

(b) Continued development of information materials to encourage 55 mph compliance for distribution to the state and local governments.

(c) Continuation of studies to expand and update assessments of the effects of the 55 mph speed limit on safety and fuel conservaton.

(d) Development of a test program to study the effect of imposing insurance sanctions for repeat speeding violators.

- After five years of preparatory work, NHTSA terminated a rulemaking that would have set standardized requirements for radar devices used by police in enforcing speed limits. 17/ The rulemaking would have proposed performance requirements and test methods for evaluating speed-measuring radar devices. The result of the rulemaking would have been a list of radar devices that qualify for purchase by state and local governments with federal funds. Since there are currently no standards regulating the quality of radar devices, the rule would also have standardized the accuracy of radar devices. This is critical in 55 mph enforcement in order to ensure that violations hold up in court. Such standards are cost beneficial in guaranteeing federal funds are being spent on reliable and accurate equipment.

- The Department of Transportation has eliminated the distribution of public information supporting the 55 mph speed limit. Secretary Drew Lewis even went so far as to send a memo to the NHTSA Administrator on March 17, 1982 reading, "I have requested that no further distribution of the '55 mph -- It's a law we can live with' bumper strip should be made until further notice."

PUBLIC INFORMATION: For Scientific Pursuit and Public Use

NHTSA's many motor vehicle and highway safety programs rest on a solid backbone of scientific, legal, and other technical information. This information belongs to the public; it has been commissioned in the public interest and funded by public taxes. Its dissemination to the public, the Congress, and the scientific community is one of the NHTSA's chief responsibilities. 1/ NHTSA's public information program has three primary purposes: 1) To share NHTSA's technical expertise with the professional and scientific community worldwide; 2) to translate highly technical information into a format and language that is useful to the general public; 2/ and 3) to ensure the agency's own accountability to the public, Congress, and the technical professions.

NHTSA's current administration claims to support these goals. The Administrator has said that one of his agency's principal responsibilities is "the promotion and dissemination of knowledge about safety and consumer-related aspects of motor vehicles to the public." 3/ The agency's new safety belt and drunk driving campaigns are, in fact, predicated on public education strategies. Increasing the public's awareness and use of available safety information can "virtually eliminate the unnecessary tragedy of highway deaths and injury," asserts the Administrator. 4/

In practice, however, the Administrator's professed concern for public education is flatly contradicted by recent agency actions. In the 19 months since the current administration took over, most of NHTSA's consumer education and technical information programs and offices, except for safety belts, have been cut.

NHTSA's technical reference library, which boasts an irreplacable collection of highway safety and motor vehicle research materials, as well as dockets for current rulemaking and enforcement, has had its reference services and collection severely disabled by budget cuts. The chief librarian, who retired 15 months ago after 15 years of agency experience, has not been replaced. The film library has been put in storage.

Development of new publications and promotion of technical and factual consumer information has virtually stopped. Most existing NHTSA consumer publications have disappeared from the Consumer Information Center in Pueblo, Colorado which advertised and distributed them. NHTSA's most popular publication, The Car Book, was discontinued. The agency has been ordered to cut back on warehouse storage facilities where printed copies of publications are kept. Secretary Lewis has personally toured the DOT storage facilities to make sure they are being reduced.

The Consumer Affairs Office -- once responsible for public meetings on rulemaking, regional meetings on agency policies, the development of new publications and the encouragement of public involvement in agency decisions -- has been dismantled, its staff dispersed. All told, the crippling of the agency's information programs is without parallel in recent memory.

The agency's quiet campaign against consumer education is all the more serious -- and tragic -- in the face of the American consumer's eager desire for information. NHTSA and DOT studies, some conducted as far back as 1976, have demonstrated that when given the choice, American car buyers will base their decisions primarily on comparative safety information. 5/ The administration does not believe in its own free market credo, that consumers should have the information to make rational decisions in the marketplace. Consider the fate of the following NHTSA offices and programs.

Technical Information and Technical Reference Library

NHTSA's Technical Reference Library is a major resource for DOT staff, the general public, the automotive industry, and public interest groups alike. Its holdings -- ranging from technical periodicals and reports to the agency's own investigation files -- constitute one of the finest collections of automotive safety research information in the world. In the past year and a half, however, budget cuts have forced librarians to cancel subscriptions, cut acquisition programs, reduce hours and personnel, and discontinue computer services.

Since the early 1970's the Technical Reference Library has been putting titles on all the agency's own motor vehicle and highway safety research reports as well as similar work from countries all over the world, on computer for easy access and current use. When the contract for this project expired in the winter of 1980, it was left in limbo for the following 19 months. The ensuing cessation of the many essential reference services supported by the library's computer data base drew a chorus of complaints from the library's most frequent users. Their complaints:

- Highway Safety Literature, a monthly listing of literature produced around the world on the subject, has been discontinued for nearly two years. This listing, which had 2,000 subscribers, was one of the library's most popular -- and indispensable -- reference tools. It was distributed free of charge to all interested parties. Although its partial reinstatement under the auspices of the Transportation Research Board of the National Academy of Sciences, has finally been planned, library staff are uncertain as to whether the past 19 months' worth of missing material will ever be restored to the volumes. They do, however, believe that former subscribers will be able to receive the new publication at no cost. [6]

- Subject bibliographies on specific areas of highway safety research, produced during the previous administration on a bimonthly basis, have also been halted, tying up reference librarians in lengthy and repetitious searches, and drastically reducing public access to the entire field of safety information.

- Computer searches for specialized reference materials, previously available to the public, for a fee, have also been discontinued for over a year. Librarians have now been instructed to transfer the NHTSA computer data base to the Transportation Research Board of the National Academy of Sciences, which is putting it on a different type of computer base, called Dialog. Although users have been assured that access to the same material will be made available through Dialog, tighter bureaucratic controls and substantially higher costs (with no possibility of fee waivers for citizen groups), as well as longer waits for material, will limit its usefulness to all but the most minor of requests. [7]

In short, the agency was unable to conduct subject area searches of the library holdings for over a year, making hundreds of millions of dollars of research virtually inaccessible to the public, researchers, Congressional Committees and the GAO. Reinstatement of computer services has only now begun.

- The NHTSA film library, totaling about 25,000 films previously available on loan, has been dispersed and sent to storage facilities. Copies of these films used to be made available to the public through a contract service at a cost to the agency of only $20,000 per year. [8]

- Although the agency claims that "[audiovisual] materials of this type are available for media or citizen group use," [9] experience proves otherwise. In April, 1982, Mrs. Margaret Daigle, of Falls Church, Virginia, was told that there were no films available through NHTSA for a presentation on driver safety and drunk driving to local high school students. When she wrote to the administrator's office for an explanation, she never got an answer.

- The NHTSA contract with a private firm for photocopying services to fulfill public requests for documents was terminated in 1981. As a result, it is no longer possible for the public and private groups, including the automotive industry, to get overnight service on documents in the public file. Delays of two to four weeks in obtaining documents are common. People outside the Washington, D.C. area, who have no other recourse, are finding it impossible to get timely service on crucial materials. [10]

- Computer indices of consumer letters, compiled by subject, are no longer being made readily available for research by interested citizens. These are vital barometers of defect trends and public opinion for researchers and consumer and safety groups. Until 1979, complete computer printouts of these files were placed on a regular basis in the Technical Reference Library, until the cost to the agency proved prohibitive. To cut costs but still make needed information available, "mini print-outs" on specific issues were then made available to the public on request.

The Reagan administration has effectively curtailed these services. Since March, 1981, the agency has insisted that the public pay for these computer services. The high costs for individual citizens or groups have made special print-outs generally unfeasible. Groups which formerly had free and ready access to these files have not even been given copies of the print-outs the agency makes for its own use. The Center for Auto Safety finally negotiated for a copy of one print-out on GM X-car transmissions, but waited seven months before finally receiving it. The Center has again asked to receive copies of any special print-outs the agency makes for its own use. 11/

In the past 19 months, the NHTSA has kept the public in the dark as to its own research activities and findings. Reports have not been released, findings have not been disseminated, and new policies have hampered the flow of information to the agency's own researchers. The widespread extent of this pattern reveals the current administration's intention of paralyzing the work of its information-gathering staff and of excluding the public from its activities. For example:

- NHTSA has not published an annual report to Congress on its activities for two years, although required by law to do so by July 1 of each year. 12/ The Administrator's office recently informed the relevant House and Senate subcommittees that it had accidentally lost the 1980 report.

- The agency has not released a report completed at least 15 months ago analyzing highway fatality data by make and model of car, an important adjunct to the NHTSA crash testing and data analysis programs. 13/

- The agency has refused to distribute a manual prepared for the medical profession called "An Ounce of Prevention." This 100-page document was prepared in draft form, critiqued by a number of doctors, and was at the printing plant when the administration took office in January, 1981. Although it has subsequently been edited to remove most of the information concerning the value of motor vehicle safety standards and automatic restraints, it has yet to be finally printed and distributed. [14]

- NHTSA refused to release research showing public preferences for built-in safety devices in vehicles. Subsequently, the agency backed down and placed the information in the public docket without advance notice. [15]

- In the late Spring and Summer of 1981, the agency illegally placed a moratorium on the distribution of all its technical reports. NHTSA claimed it took this action after receiving a directive from OMB to all government agencies to review and justify all publications. The agency subsequently removed this moratorium when challenged.

Two recent decisions, both recommended by NHTSA, have effectively disabled some of the agency's own information collection activities:

- The Justice Department, at President Reagan's urging, has encouraged the federal courts in California to modify and ultimately revoke the provisions of a 1969 antitrust consent decree between the government and the auto industry. The case alleged that the domestic auto companies conspired to withhold emissions technology from the marketplace. The consent decree prohibited the companies' exchange of research information on emissions control and the filing of joint industry comments on government auto emission and safety rulemaking proposals. The decree was designed to encourage industry-wide competition on new environmental and safety technology, and to prevent the individual companies from misrepresenting their ability to comply with government emissions and safety standards. If the Motor Vehicle Manufacturer's Association is allowed to file comments for the industry as a whole -- as the administration wants -- automakers will be better able to resist federal requirements for new health and safety technologies. [16]

- The NHTSA no longer requires manufacturers to submit semi-annual reports on their compliance with fuel economy standards. Nor are they required to inform the agency of changes in technology and sales volume from the previous model year that would affect average fuel economy. In addition, manufacturers no longer must disclose the marketing measures they intend to use to improve fuel economy. These information requirements were essential, not just to the enforcement of its standards but to the agency's future standard-setting activities, as well. [17]

Consumer Information Rulemaking

The NHTSA is attempting to undermine one existing and one proposed rule requiring product testing and labeling by manufacturers. In doing so, it contradicts its own policy of own policy of letting the marketplace govern economic behavior. The Uniform Tire Quality Grading regulation and Crashworthiness Information proposal serve both to protect the consumer and to enhance the marketplace. Because the required tests are government-standardized and spot checked, the comparative information they provide is both reliable and unbiased. It also acts as a spur to competitive safety manufacturing.

- Crash Rating Program. A provision in the 1972 Motor Vehicle Information and Cost Savings Act requires the NHTSA to provide consumers with information relating to the crashworthiness of new cars. [18] A Notice of Proposed Rulemaking put forward in January, 1981 would require manufacturers to print crashworthiness ratings on the windshields of new cars. [19] The proposed program would provide consumers with information on the safety performance of new cars in the dealer showroom, and would encourage manufacturers to compete on the basis of vehicle crash safety. The present administration has not taken action on the notice.

The auto industry argues that the crash tests are not sufficiently representative of actual crashes -- an argument that could be made about scientific tests for all products. Since the auto industry relies on these tests, despite their imperfections, to design its cars and the government to test them, consumers should have access to the results as well, at the time of purchase. The NHTSA's own polling data indicates that the public is enthusiastic about the idea, and would very likely base purchasing decisions on the crashworthiness ratings. [20]

- Uniform Tire Quality Grading Standards. In the 1966 National Traffic and Motor Vehicle Safety Act, the NHTSA was required to set a tire quality grading standard by 1968. In 1974, the standard had still not been set, and the agency was sued by consumers. Under court order, the agency did finally set the standard in 1975. The tire industry sued the agency twice to delay or defeat the standard, but lost each time. In 1979 and 1980, the standard was implemented to require manufacturers to test and label their tires according to three performance criteria: treadwear, traction, and heat resistance. Thus, this standard, for the first time, gave consumers at the retail tire outlet comparative information on these key safety and economic factors. Consumers could judge each tire make and model and compare their prices to make intelligent purchase decisions.

The agency has now proposed to eliminate the treadwear rating. [21] Treadwear is the characteristic most familiar to consumers, and the one that most affects the consumer's pocketbook. In attempting to remove this provision, and to avoid issuing the crashworthiness label, the administration belies its professed belief that "an informed marketplace is the key to improving automobile safety and performance." [22]

Publications and Public Affairs

The publications program at NHTSA has suffered some of the most severe cuts in the agency. According to a staff member, the Office of Public and Consumer Affairs "is essentially dead." In practical terms, this means that the results of millions of dollars worth of agency-generated research studies no longer reach the public that paid for them. Indeed, the agency has initiated deliberate efforts to withhold or to complicate the acquisition of this information.

- The agency has not reprinted, and has no plans to reprint, any of its consumer information publications. (The second printing of the 1981 The Car Book, underway as the new administration stepped into office, was allowed to proceed in February, 1981). In addition, there have been no new consumer publications developed at NHTSA (except on seat belt use) in the past 19 months. None are planned. A single year under the Carter administration averaged 40 to 50 new publications, both technical and consumer oriented. 23/

- Publications from the remaining stock are now only available when specifically requested by title. According to the Insurance Institute for Highway Safety, individuals who request general information on highway or motor vehicle safety issues such as tire grading or child restraints are being turned away. 24/

- Despite the enormous popularity of The Car Book, NHTSA refused to prepare a revised second edition of it in September, 1981. According to the GSA Consumer Information Center, the first edition of The Car Book has been the single most requested publication in the history of the Center. 25/

- When a former staff member privately published the 1982 edition of The Car Book, which was a significant improvement over the first edition, the Administrator attempted to undermine its distribution by criticizing the lack of more recent car crash test data. The data were missing because the agency was delinquent in its testing program. 26/ The Administrator also refused to give the publishers of the 1982 The Car Book access to hundreds of letters that the agency received from consumers following publicity for the new edition. 27/ When Mrs. Ellen Baden of Columbus, Ohio wrote to the agency asking for crashworthiness information on a new Ford Fairmont, she was told that she would have to pay $6.00 an hour for research time. Bewildered, she wrote back to ask why she could not be sent The Car Book, which contained the information at no cost, as advertised. 28/

- As the new administration came into office in 1981, the agency tried to undercut the continuing popularity of the first (1981) edition of The Car Book by recalling all of the television and radio public service advertisements which had been distributed. 29/

- The agency has cancelled distribution of 12 of the 13 free auto and highway safety publications previously available to the public through the Consumer Information Center in Pueblo, Colorado. According to the GSA Consumer Information Center, auto-related information always ranked in the top ten most frequently requested publications. 30/

- The release of car crash data has been quixotic and confusing. In 1981 it took a Freedom of Information Act (FOIA) request from Helen Kahn of Automotive News to get the crash test results on 1981 cars released. By the time she made the request, in August 1981, most 1981 cars had been sold and the information was almost out of date. In February, 1982, one 1982 car, a Volvo, was publicly crash tested at the NHTSA facility outside of Columbus, Ohio. But no other 1982 model crash test data were released until August, 1982, when Kahn again requested the data and was given the results of 3 of 8 completed tests. No press release was ever issued for general distribution of the information. The Car Book was designed to release all the current crash test data at once in a timely fashion and in a form the public could readily use. This concept has been shelved.

- The agency did not issue any press releases alerting the public about defect recalls for 8 months. It changed its policy of silence in September, 1981, when it was harshly criticized by the Detroit Free Press. 31/ Still, the agency is issuing many fewer press releases on its activities in general: it issued 63 fewer releases in 1981 than in 1980.

- The agency has never distributed a film that was being completed just as the new administration took office. "The Price You Pay," filmed at the Rehabilitation Institute of Chicago,shows the trauma involved in the life of an individual who becomes a paraplegic as a result of an auto crash. The agency also ordered the deletion of scenes showing the vehicle safety remedies that can prevent this kind of horrible tragedy.

- The agency has discontinued showing demonstration cars equipped with airbags in each of the ten NHTSA regional offices and Washington, D.C. These cars helped the public to understand how air bags operated. They also gave NHTSA personnel the opportunity to demonstrate the value of child restraints, safety belt use, and avoidance of drunk driving. Millions of people were exposed to these issues between 1977 and 1980 during the public demonstrations of these cars.

- The agency has kept its unique research safety vehicles (RSVs) locked in the DOT garage, away from public view.

These vehicles, produced in response to a statutory mandate, demonstrate innovative automotive technologies. Specifically, they show how fuel efficiency and safety can be designed together in aesthetically attractive cars. The RSVs, which have been tested in Europe and Japan, protect occupants in frontal and side crashes up to 50 mph, and achieve 28 to 38 mpg fuel economy. 32/ There is widespread interest in these cars, which in 1979 were displayed in 52 cities and seen numerous times on national television. In 1981, the agency refused to make a Research Safety Vehicle available in California for a television program, arguing that such an appearance was a "commercial benefit" to the program. The vehicles are occasionally made available upon specific request.

Hotline

The NHTSA auto safety hotline was established on a temporary basis in 1975 and made a permanent feature in 1977. It was transferred from the Public Information Office to the Enforcement Office, since its primary purpose was to respond to specific questions from consumers about potentially defective cars. Operators also responded to requests for publications and referred callers to other agencies or organizations that could be helpful with non-safety car problems.

Minicomputers to help operators respond to questions about specific makes and models replaced the bulky notebooks they had previously used. The computers could also record automatically the name and address of the caller so that mail verification of filed complaints could be mailed quickly to the caller. The hotline was a popular and widely used service -- so popular, in fact, that in January, 1981, the agency issued a rule requiring defect notices that manufacturers send to car owners to include the hotline's toll-free number. 34/

To deflect criticism about its failure to publish The Car Book and other cutbacks in consumer information services, the agency announced in February, 1982 that it was starting an "expanded" hotline to provide "more" information to the public. This so-called expansion consists of responding to all types of auto safety questions over the hotline telephones. 35/

Unfortunately for the public, this announcement was nothing more than a public relations hoax. Rather than improving the service, the expansion has downgraded it. So much information has been consolidated into this one program that it is impossible to convey any of it over the telephone. Callers now do not even get direct answers to questions on automobile defects over the telephone -- the operators usually do not know the answers. Information that is requested is often sent to the caller in a complex technical format, difficult for the layman to read, and oftentimes must be culled from two or three different publications. Furthermore, while the agency boasts that the "new" hotline receives 650 calls per day, this is about the number handled by the "old" hotline.

Informal surveys of the hotline 36/ have indicated that not a single operator was able to give crash test or fuel economy information when a specific model was asked about. In only two or three cases was information on recall status of a particular car available over the telephone. In the case of the crash tests, not only is the information not available on the phone, but the consumer is routinely mailed a confusing array of technical charts. Consumers are expected to assess an automobile's performance in the crash test by deciphering complicated injury data collected from instrumented dummies (the HIC, or head injury criteria number, the chest loads measured in G's, and the femur loads measured in pounds). Previously, consumers were simply told whether and by how much a vehicle passed or failed the test. 37/

In several instances, when consumers requested crash data on specific models, the information was not included in the packet sent to them because the crash tests had not yet been completed. The callers were not told that this information was unavailable, but discovered it only after reading through confusing and technical information. When several callers requested information on airbags it was "inadvertently" left out in each case.

In summary, the "new" hotline is an inefficient and costly replacement for The Car Book and other publications and public information programs. It is 8 times more costly for NHTSA to fill orders for The Car Book through the hotline than for consumers to obtain it directly through the Consumer Information Center in Pueblo, Colorado. The cost to send The Car Book from Pueblo is 21 cents per copy. When processed through the hotline, it costs $1.60 for postage, handling and processing (a figure that excludes operator time to handle the request). 38/

SAFETY ENFORCEMENT AND DEFECTS INVESTIGATION

Under the National Traffic and Motor Vehicle Safety Act, auto manufacturers are required to certify their vehicles for compliance with federal safety standards. There is no premarket review by NHTSA. Instead, the agency randomly selects and tests various vehicles and equipment to assure their compliance with federal standards. The amount of compliance checking done must be sufficient to persuade manufacturers to comply with the law in the first place. Also, the penalties for non-compliance -- recall and correction of the vehicles and a monetary fine -- must be swiftly and surely imposed to deter violations.

The agency's defect requirements are somewhat different. The manufacturers are responsible for notifying the NHTSA when they discover a safety-related defect. In turn, the agency is responsible for requiring the recall of any defective vehicles which come to its notice. A tough, no-nonsense enforcement attitude is essential if the manufacturers are to report safety defects on a routine basis.

Most manufacturers will not quibble at recalling an obviously defective vehicle. But when a defect is considered arguable, or unprecedented, a cost/benefit perspective may prevail: the likelihood of NHTSA requiring a recall and the possibility of future successful damage suits are measured against the economic cost of an immediate recall. Thus, when NHTSA signals its intent to work "cooperatively" with the auto industry in carrying out its enforcement responsiblity, manufacturers have little motivation to consider the defect's cost in terms of public health and safety.

In the past 19 months, NHTSA's reluctant enforcement of federal safety standards has become all too evident. The agency has reduced its testing of new vehicles for compliance with federal safety standards. Manufacturers who fail to meet these standards are rarely fined. A new investigatory procedure, the "informal inquiry," has been created. During this stage, the agency now engages in covert, off-the-record meetings with auto manufacturers. This in turn, has drastically reduced the number of formal engineering analyses and defect investigations open to the public.

In short, the public is being denied its right to an adequate safety enforcement program. In the compliance program, for example:

- The agency has drastically reduced its testing of new vehicles for compliance with federal safety standards. Thirty five hundred fewer items of equipment were tested in fiscal year 1982 than in the previous year, 1/ making it more than likely that some items of equipment will fall through the federal safety net to endanger unsuspecting consumers.

- NHTSA officials are showing little interest in collecting penalties from manufacturers who violate standards. The agency collected one-twentieth the amount in penalties in fiscal year 1981 that it did in fiscal year 1980. 2/

The agency is undermining the effectiveness of its own defect enforcement program through concealment, delays and sometimes neglect. One remarkable example of NHTSA's new attitude toward its enforcement responsibilities is the "informal inquiry" instituted by the Office of Defects Investigation.

Informal Inquiries

- When the agency suspects the existence of a safety defect, its standard procedure had been to initiate an engineering analysis followed by a formal defect investigation. Now, prior to either of these actions, agency officials conduct preliminary safety inquiries informally, through telephone conversations and meetings, with auto manufacturers. No public record of these meetings exists. Although twenty-two "informal inquiries" have recently been opened, 3/ a listing of them has been kept secret.

The procedural guidelines that govern engineering analyses and defect investigations serve an important purpose. In the absence of any standardized government definition of what constitutes a safety defect, they instill a measure of public accountability into what is otherwise a highly discretionary process. The Administrative Procedure Act and the Freedom of Information Act require public disclosure of agency actions to prevent backroom bargaining over the nation's welfare and arbitrary and unaccountable decisionmaking.

In establishing the private "informal inquiry" as a form of preliminary investigation, the agency is attempting to justify its highly suspicious off-the-record dealings with the auto industry on safety-related matters. The NHTSA's new policy is a questionable interpretation of the Administrative Procedure Act and the Freedom of Information Act. An inquiry into the new policy has been launched by the Center for Auto Safety.

Engineering Analyses

An equally disturbing blow to a strong NHTSA enforcement program is the huge reduction in the number of engineering analyses. During fiscal year 1981, the agency opened only 19 engineering analyses. The previous administration opened 65 analyses in its first year. 4/

- Equally as alarming, the agency has closed an unprecedented number of pending engineering analyses. During the past 19 months, 162 pending cases out of a cumulative total of 241 were concluded. 5/ Few of these resulted in recalls.

- When GAO investigators asked why so many cases had been dismissed, NHTSA's Office of Defects Investigation said that it had spent much of 1981 "cleaning up" old engineering analyses, shedding inactive cases that had been in their files for years. 6/ Records indicate, on the contrary, that over half (or 84) of the engineering analyses terminated by the Office had been pending for only a year or so.

- Engineering analyses are essential tools for consumer groups and engineering firms interested in getting defects corrected. But obtaining access to engineering analyses is not very easy any more. For seven months in the beginning of 1981, NHTSA kept secret its lists of pending and recently opened engineering analyses until pressure from the public forced their release. The agency then withheld the lists for another nine months, from August, 1981 to May, 1982, until pressured again. 7/

- The same lists have provided progressively less information over the past year and a half. Seven categories of critical information such as "date opened," "manufacturer contacted," "manufacturer reply," and "status" are no longer released. 8/

- The agency has no master list of engineering analyses that have been closed. It is therefore difficult to learn which cases were closed with no action taken and which cases required recalls. The only way to determine the status of an engineering analysis is to request its file. 9/

- A request to view the file on a completed engineering analysis, which formerly would have been made available the same day as the request, now takes over a month to process. Clarence Ditlow, Director of the Center for Auto Safety, concludes that NHTSA "is apparently embarrassed at how these files will document its failure to carry out its safety mission and is simply trying to withhold them from the public." 10/

- This possibility is not speculative. Despite having received at least 600 owner complaints of automatic and manual transmission failure in X-cars (Chevrolet Citations, Pontiac Phoenixes, Oldsmobile Omegas and Buick Skylarks), NHTSA has yet to open either a defect investigation or an engineering analysis into this matter. NHTSA has not even sent a letter of inquiry to General Motors asking for records of any similar complaints received by the manufacturer. Clarence Ditlow recently testified before a Senate Subcommittee hearing that "[t]he agency's flagrant denial of its lifesaving mission is all the more egregious in light of GM's own admissions concerning the quality and reliability of the X-car." 11/

- The agency's timidity at initiating new engineering analyses, its abrupt termination of pending cases and its secrecy about public documents and meetings raise serious questions about the NHTSA's enforcement program. The Center for Auto Safety has initiated a major review of all NHTSA engineering analyses opened more than a year ago, to determine if the agency, in its rush to cripple this program, has failed to investigate some serious health hazards.

- NHTSA's failure to publicize its enforcement activities leaves motorists vulnerable to harm. Car owners, unaware that the government is investigating potential safety defects, cannot take protective action, nor can they assist an investigation by alerting the government to their own experiences with safety defects. NHTSA has not held one public meeting in a defects or compliance proceeding in a year and a half. And its release of information on recalls has been haphazard, and inconsistent.

- The 10 year old NHTSA Parts-Return Program, which encouraged auto repair shops to ship allegedly defective auto parts to agency safety experts for review, has been discontinued. Nearly 10,000 auto repair shops had participated in this successful program. Mechanics brought many defect problems to the attention of NHTSA engineers and were a valuable source of defective parts for preliminary analyses. 12/

Defect Investigations

- The agency is also conducting many fewer defect investigations. In 19 months, the current administration has opened eight formal investigations; more than twice as many were opened in the first nine months alone of the previous administration.

Recall Campaigns

- The number of vehicles whose recall NHTSA initiated has dropped from 3.12 million in 1980 to 2.22 million in 1981, to 343,072 (to date) in 1982. The number of vehicles recalled in 1982 represents an 89 percent decline from the 1980 figure. The number of recall campaigns has declined as well: from 33 in 1980 to 28 in 1981 to 13 (to date) in 1982. The latest figure represents a 60 percent decline in recall campaigns since 1980. 14/ Together, these figures illustrate a wholesale deterioration of the agency's concern for the safety of American motorists; agency recalls may have declined, but have defective vehicles?

- In the first nine months of 1981, the agency did not even inform the public of the recalls it had required -- a pattern observers thought cured when the Detroit Free Press blew the whistle on this practice. 15/ (Public attention was further drawn to the issue when a Ford Motor Company spokesman admitted that Ford stopped announcing its recalls to the public because NHTSA had stopped.) 16/ However, of the recalls initiated by NHTSA in 1982, only two have been publicized. In addition, the agency has yet to publish any reports on recall campaigns conducted by domestic and foreign manufacturers in 1982. These reports are usually published quarterly.

- When the agency does require a recall, it is often only after lengthy delays in the investigation and prosecution of the case have diminished the usefulness of the recall. A recent GAO report criticized NHTSA's investigation process for "often tak[ing] years to complete, while vehicles continue to be exposed to possible safety deficiencies." The report noted that the longer the investigations were delayed, and hence the older the cars, the less likely owners were to respond to an eventual recall. 17/

- Another indicator of the agency's vigilance is the auditing of recall campaigns. Because audits of recalls are conducted on paper (the manufacturer provides completion rates, copies of recall letters, service bulletins, etc.) and do not require much manpower, it is likely that the agency is slacking off if there is a high proportion of recall audits relative to defect investigations. Since the present administration took office, the yearly ratio of recall audits to defect investigations has soared. In 1980, there were three audits for every two investigations; in 1981, there were ten audits for every two investigations. 18/

BRAIN DRAIN

The administration's strategy to gut NHTSA safety programs is twofold. First, it has undermined the key lifesaving programs shown by scientific research to yield a high payoff for little or negligible cost. The agency has revoked or failed to issue key vehicle safety standards; it has refused to fund enforcement of 55 mph; and it has refused to endorse and support state motorcycle helmet use laws, which have been enormously successful. More than this, the agency's scientific pursuits in these areas have been seriously crippled. It has eliminated the experimental safety vehicle program which showed that the technology exists to build cars that could withstand 50 mph frontal crashes without seriously injuring the occupants. It has eliminated all research and development work supporting the 55 mph speed limit and motorcycle programs.

In short, the agency has initiated an unprecedented alteration in the fundamental premise underlying the motor vehicle and highway safety program, which since its beginning in 1966 has been grounded in scientific facts. During these last 16 years, through both Democratic and Republican administrations, the agency has never been submitted to the capricious, ideological approach to governing that it is now experiencing. With its present failure to carry out its statutory mission of controlling highway violence, NHTSA is engaged in wilful bankruptcy.

A second devastating part of the administration's plan has been deliberate removal of key professional staff needed to carry out the agency's statutory mandate. Since Congress and the courts will not permit the administration to abrogate its responsibilities, the Reagan policy is to pursue its goals by ridding the agency of its brain power. The departure of dozens of skilled professionals from NHTSA is an "invisible" but effective plan to paralyze the agency so it cannot carry out its central lifesaving mission.

NHTSA's regulatory and scientific responsibilities are highly complex and detailed. Over the years it has gone to great lengths to build a professional staff with technical and scientific expertise. This has required keen competition with industry and other government agencies. Even after the agency had attracted a bright and capable staff, it also had worked to maintain a stable professional environment, not only to retain its staff but also to provide continuity to NHTSA's regulatory, research and grant-in-aid programs.

In less than nineteen months the current administration has successfully reorganized and restructured the agency so that more than 200 professionals have left. Although NHTSA employees comprise only 5% of the U.S. DOT [*] workforce it has sustained almost 10% of the staffing cutbacks, or twice its proportional share. [1] This figure becomes even more significant when one considers that in September, 1980, there were 897 people allocated to NHTSA with 809 full-time permanent employees. Today there are only 620 full-time employees. NHTSA has lost more staff in 19 months than were riffed last year from the Veterans Administration (with 240,575 employees), the Department of Education (with more than 5,000 employees), the Justice Department (with a staff of 55,949), or the Department of Energy (with 18,537 people). [2]

The administration has targeted cuts to specific program activities affecting traffic safety programs, research and development, and rulemaking. According to a partial inventory conducted by the local employees union (AFGE Local 3313), at least 203 employees have left the agency. Of these employees 75% were in professional positions while 25% were clerical support staff.

These figures do not come close to reflecting the real tragedy of the staff departures. Of those who have left, at least nineteen had doctorate degrees. An additional seventeen had master degrees. In terms of years of experience lost -- a critical factor in the highly specialized fields of auto and traffic safety -- the current administration has eliminated over 600 professional person-years of experience.

Although the agency's FY '83 personnel ceiling is 640 positions, the current NHTSA leadership has chosen to seek acclaim from the Secretary of Transportation by reducing that number even more. This is in direct conflict with assurances given to the House Appropriations Subcommittee on Transportation. In response to a question by Chairman Adam Benjamin addressing concern that there be no more RIF's (reductions in force), the Administrator gave the following response: "Our end-of-year personnel ceiling of 640 permanent positions will be achieved in FY '82. No additional RIF's are planned for FY '83 if our budget is enacted." [3]

Contrary to its commitment to the House Appropriations Subcommittee, NHTSA has initiated plans within the agency to reduce the NHTSA by an additional 54 positions. The professional engineers and scientists in the rulemaking office, which now has only 70 employees, will be the hardest hit. The scientific and technical staff in the research and development office (the major support group for rulemaking activities) will also suffer devastating losses.

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[*] Federal Aviation Adminstration (FAA) figures not included becuse of the air traffic strike.

Every previous Secretary of Transportation, no matter what the political affiliation or program priorities, has left the agency in a better position to meet the safety challenges of tomorrow. The legacy of the current administration is already obvious: a demoralized, bare bones agency pursuing programs and policies that have little, if any impact on preventing deaths and injuries in crashes.

POINT . . . COUNTERPOINT

Three weeks after taking office, Secretary Drew Lewis gave a speech to the National Automobile Dealers Association. In it he discussed his philosophy on the issuance of safety regulations and the automobile industry. He stated:

> If I could do it, it would be a four year moratorium . . . I know four years is unrealistic, but my point is that this administration opposes regulation.

More recently, in hearings before the House Subcommittee on Telecommunications, Consumer Protection and Finance, the following discussion took place between the Subcommittee Chairman, Representative Tim Wirth and Secretary Lewis' choice to head the NHTSA, Administrator Raymond Peck.

> Mr. Wirth: Could you tell me and the Subcommittee in summary form what it is you are doing for safety?
>
> Mr. Peck: Yes, we are continuing with not only our regulatory reform efforts, but our regulatory priorities.
>
> Mr. Wirth: Let us go ahead with safety. We have heard about the new federalism and regulatory reform and all that mind control stuff that goes on in this Administration. What are you doing for safety?
>
> Mr. Peck: Let me give you a specific example.
>
> Mr. Wirth: That is what I want. Let us have some specifics, one, two, three, four, five, no filibusters--specifics.
>
> Mr. Peck: One, we have approved an internal order to assure that petitions for rulemaking are classified within 7 days, handled within 30 days, and, depending upon the actual complexity of the issue, finally resolved.
>
> Mr. Wirth: Let us talk about safety, not internal bureaucracy at NHTSA. What are you doing for the American people in terms of safety on the highways?
>
> Mr. Peck: Mr. Chairman, this is the heart of our rulemaking responsibilities. When we get a petition for a rulemaking, it is the most direct, most immediate calling to our attention by the public, by an organized interest group, by whoever it may be.

Mr. Wirth: Where are the rules? What rules have gone through this? What have you done? What have you done? One, two, three, four, five, what have you done?

Do you want to submit it for the record?

Mr. Peck: What I would submit would be our annual report, I suppose.

Mr. Wirth: I would like to know for the record right now, what have you done? One, two, three, four, five. I have cited you what you have not done. I have cited to you what the legislation says you are supposed to do. I have gotten no response yet in terms of what this Administration has done about highway safety in the United States.

Mr. Peck: Now, Mr. Chairman, that is neither a fair nor an appropriate question.

Mr. Wirth: I cited the start, the intent and the purpose of the Act. And you agreed that that was what the legislative authority says.

Mr. Peck: The legislative authority also imposes, and the courts have reaffirmed over and over again, additional responsibilities which I would be remiss in my sworn duties to ignore. And those responsibilities include a determination that a specific standard is reasonable, appropriate and leads to highway safety.

Now, with that kind of a background, I will tell you specifically what I have done. I have found that the 208 standard would not have led to highway safety and would not have satisfied that Congressional mandate. I have found that several other specific standards were adopted either in advance of technology or because of changed circumstances, fully documented in the record, no longer met the Congressional test for what a motor vehicle safety standard can and must be.

It is my job to implement that statute, but not just a part of that statute. Now, if you are asking--

Mr. Wirth: I hear already, Mr. Peck, what you are not doing, all right. What I would like to know again, if I could repose the question, all right, is what you are doing for safety.

You have eliminated the 208 standard, the automatic crash protection standard, right? Now what have you done?

Mr. Peck: Mr. Chairman, I have already introduced into the record the three management processes whereby we will make research and development priority decisions, rulemaking priority decisions and rulemaking evaluation decisions. Those documents speak for themselves and fully answer your question.

Mr. Wirth: Mr. Peck, if you are unwilling to give us specifics as to what you have done in terms of auto safety, why do we not leave the record open and ask you to come back for the record and tell us, one, two, three, four, five, what you have done for the safety of the American people on the highways.

Mr. Peck: Let me attempt now, then, Mr. Chairman. If the material that you have not yet seen is not adequate for your purpose, then let me address your attention to this. With respect to the safety belt program, we estimate that 14,000 lives are in jeopardy. Prior Administrations did nothing with respect to this effort. We are now budgeting approximately $6 million to that effort. Initial results in some states already are showing high return.

With respect to alcohol, a point raised by someone else earlier this morning, despite the budget restrictions imposed upon us by the Congress when they reduced the Administration request by $9 million for operations and research, we are allocating $10.5 million more than the agency has ever spent in alcohol.

With respect to recalls, the largest number of recalls --the fourth largest number of recalls ever undertaken by this agency occurred in 1981. Those recalls occurred faster and more efficiently than ever before, precisely because they were undertaken earlier in the recall process than ever before.

We are continuing with our research and development efforts in critical areas such as biomechanics and vehicle research. We are continuing to develop our RSV/ESV/ISV program to a degree that we will be able to actually produce results in fact in production vehicles. The VW contract that we now have underway, that is the logical extension of that research which was completed with the prototype vehicles which are sitting outside the building right now, are being undertaken at no reduction in fiscal responsibility.

With respect to the consumers, we have made available more and in a more timely fashion information with respect to not only safety but consumer-related aspects of our program.

We are now handling up to 800 calls a day on the consumer hotline. And as we promote the consumer hotline, as the area--whereby in one place everybody in the country can in a toll-free telephone call get every piece of information maintained and published by the Federal Government.*

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* Hearings before the Subcommittee on Telecommunications, Consumer Protection and Finance, Committee on Energy and Commerce, House of Representatives, March 23, 1982.

Motor Vehicle Safety Standards

1/ National Traffic and Motor Vehicle Safety Act of 1966, P.L. 89-563. See Traffic Safety Hearings before Committee on Commerce, U.S. Senate, 89th Cong., 2d Sess., March-April, 1966.

2/ U.S. Department of Transportation, NHTSA, Office of Program and Rulemaking Analysis, "The Cost of Automobile Safety Regulations," Preliminary Report, March, 1982, Summary p. 2.

3/ *Ibid*., Summary p. 1.

4/ U.S. Department of Transportation, NHTSA, Five-Year Priorities for Motor Vehicle Safety Rulemaking and Research, Calendar Years 1981-1985, January, 1981 [DOT/HS-805 701].

5/ "Program To Provide Maximum Public Impact For The 1956 Ford Lifeguard Car," Ford Motor Company, 1955.

6/ Letter from Rep. Timothy Wirth to Secretary of Transportation Drew Lewis, May 26, 1981, p. 2.

7/ "Actions to Help the U.S. Auto Industry," The White House, April 6, 1981, A41-A57.

8/ "Motor Vehicle Safety Issues," Hearings before Subcommittee on Telecommunications, Consumer Protection and Finance, Committee on Energy and Commerce, U.S. House of Representatives, 97th Cong., 1st Sess., June 4 and July 29, 1981, pp. 68 and 84.

9/ Comments of William Nordhaus, John Master Professor of Economics, Yale University, on Notice of Proposed Rulemaking on Federal Motor Vehicle Safety Standards -- Occupant Crash Protection, NHTSA Docket No. 74-14, Notice 22, May 26, 1981.

10/ Hearings on Authorization and Oversight of the National Highway Traffic Safety Administration, Subcommittee on Telecommunications, Consumer Protection and Finance, Committee on Energy and Commerce, U.S. House of Representatives, 97th Cong., 2d Sess., March 23, 1982 (in press).

11/ U.S. Department of Transportation, NHTSA, "Small Car Safety in the 1980's," December, 1980, and "The Safe, Fuel Efficient Car, A Report on its Productibility and Marketing," October, 1980.

12/ Joan Claybrook, "Motor Vehicle Occupant Restraint Policy," remarks presented at Conference on Risk Assessment, National Academy of Sciences, June, 1981.

Mr. Gore. If you care to summarize any portion of your statement, feel free to do so. Please proceed.

STATEMENT OF JOAN CLAYBROOK, PRESIDENT, PUBLIC CITIZEN

Ms. Claybrook. I will do that, Mr. Chairman, in the interest of time.

I would like to say that I believe this hearing is a very timely one. The population of small cars with their inherent safety problems continues to expand, and we should expect an increase in death and injury on the highways, as has been documented earlier.

I would like to just point out that when we are talking about young drivers, that auto crashes are the largest killer of people under age 34 in the United States. So, when we talk about young drivers, we should consider not only their overinvolvement which may be in part because of their age, but in the interests of this society, trying to protect them.

Auto crashes are also the primary cause of paraplegia and also epilepsy. I point that out because the cost of trying to help handicapped and disabled people has been a controversial issue in the United States. If we would try to improve our auto safety performance, then we would have a much less expensive route to go with the handicapped, particularly in terms of medical care as well.

I would like to say that the problem is not a hopeless one because there is technology that is available to correct many of the problems that we see in automobiles. We already know, for example, that the motor vehicle safety standards that were issued since 1968 have saved some 80,000 lives in the United States making the National Highway Safety Administration's program a major public health program. I think that it ought to be viewed and looked upon in that manner—not as just a usual transportation program, but as a public health program.

Additional safety standards already developed or available would save many thousands of additional lives. The research safety vehicles—this morning we have already seen a television spot on these cars that were developed by the Department of Transportation—demonstrate state-of-the-art technology that is available for the design of vehicles that can crash without injury, severe injury or death, to the occupants at 50 miles an hour into solid barriers which is the most severe type of crash, and 40 to 50 miles an hour inside impact crashes.

I would note that when we put that spot on television—the spot Dr. Haddon showed—we got about 10,000 calls from members of the public to our toll-free number asking where they could get the car or why the manufacturers wouldn't design those kinds of features into production cars. As Dr. Haddon pointed out, it was very important in showing that safe cars don't have to be ugly cars.

Someone might want to tell Representative Walker that he shouldn't crash in a tank because it is the worse kind of vehicle in which to crash.

In 1977, Secretary of Transportation, Brock Adams, acted——

Mr. Gore. I have to ask you why.

Ms. Claybrook. Because what happens is that when you hit the interior of the tank, you bounce around back and forth. If you ask anybody who has been in the Army what happens when you ride in the tank——

Mr. **Gore**. All right. I am sorry I asked. Go ahead.

Ms. **Claybrook**. In 1977, Secretary of Transportation Brock Adams acted to require more fuel-efficient vehicles to conserve energy and reduce our dependence on foreign oil. At the same time, we knew that the lighter weight vehicles would be far less safe than traditional cars. For that reason, he issued two standards simultaneously, one for fuel efficiency to meet the 1975 statutory mandates through 1985 models, and the second for automatic restraints.

In terms of safety, these new requirements would make these small cars approximately equivalent in safety to the larger cars. In terms of consumer cost—and this is a very important issue, and it has been raised already today—the Department of Transportation estimated that after paying for the improved fuel efficiency and the improved safety with automatic restraints, that the buyer of a 1985 car would save approximately $2,500 over the lifetime of that car compared to the buyer of a 1977 car because of reduced fuel that would be used.

Two months ago, we published a report called "Reagan on the Road: The Crash of the Auto Safety Program," which documented how the Reagan administration has brutally and unconscionably interrupted what I believe was a very thoughtful approach to motor vehicle safety. During the past 20 months, the Reagan administration has ignored the law, it has ignored scientific facts, it has ignored the nonpartisan traditions in this program, and it has ignored its own staff recommendations. It has abandoned its independent research activities, initiating instead a secret so-called cooperative research project with the automotive industry. It has discontinued all fuel economy research, as well as the oft-hailed research safety vehicle program.

In terms of its current activities of particular importance to small car safety, it has revoked the automatic crash protection standard, it has weakened the collapsible steering assembly standard slightly which, instead, needs to be improved, and it has stopped rulemaking on side impact protection. Side impact crashes kill 9,000 occupants each year. It has failed to release crash testing data until after the close of the relevant model year, and it has made this information harder to acquire and understand. It has publicly advocated revocation of the 55-mile-an-hour speed limit, abandoned all 55-mile-an-hour research, and it has failed to enforce the statutory mandate. And just today, the Department of Transportation is recommending overriding existing State laws in order to allow larger trucks to travel coast to coast on our highways, jeopardizing the safety, of course, of more auto occupants.

Approximately 1 year ago, the Reagan administration decided to turn its research program in the NHTSA over to the automotive industry when it secretly initiated the so-called cooperative automotive research activities, first with the Detroit companies and then with the importers.

While the agency claims that this program is not a secret one, it has issued no press releases announcing it to the public. The meetings are held in private without any prior public announcement or any invitations to the public or representatives of academic institutions. No other organizations or entities are allowed to participate in the research definition or activity. Although a public docket was established on May 19, 1982, this occurred 6 months after the first meetings with the industry. Subsequent materials were not placed in the docket until November 1, 1982, almost a month after Public Citizen complained about the withholding of these materials and filed a request for them under the FOIA.

Covert Government research is entirely inappropriate, and vigorous objections have been voiced by leaders in academic institutions, such as Dr. Robert Hess at the Highway Research Institute at the University of Michigan. The NHTSA is a regulatory agency granted the authority to conduct research in order to carry out its statutory purpose of issuing vehicle standards. The research activity is needed to acquire sufficient knowledge to make independent scientific judgments without relying solely on the claims of the regulated industry.

The advantage to the automotive industry of a cooperative research program is obvious. The various companies can avoid taking any initiatives, claiming that research is being jointly conducted and any action to improve vehicle safety would interfere with the joint research program. In addition, the research basis for future safety standards is entirely undermined by the diversion of agency resources away from this primary purpose to the so-called cooperative program.

Third, the agency has revoked its most important pending rulemaking action for side impact protection to make side impact work part of the cooperative program. The agency attorneys would not allow "cooperative" research on pending rulemaking actions, but this advice was not revealed to the public in the July 12, 1982, Federal Register notice revoking that rulemaking proceeding. The notice merely stated that the agency's research "has demonstrated that there are many questions remaining concerning the most appropriate test methodology and performance criteria and levels. Many complex issues have arisen which will require considerable time to resolve." The side impact withdrawal notice did say, however, that the rulemaking would be reopened "after research and analysis has progressed to the point that appropriate test methods and performance parameters can be developed, a process that would likely take a year."

Thus, the automotive industry behind closed doors is helping to "guide" and "design" research for the development of a rulemaking proposal. And it is hardly any accident that this particular future safety standard was selected for this program. Until recently, the agency has focused on the development of a dynamic crash test standard with an instrumented surrogate. The automotive industry has instead urged a test of vehicle subsystems, parts of a car, thus avoiding full-scale crash tests that reproduce the dynamics of the crash. As might be expected, the materials recently revealed by the agency in response to our Freedom of Information Act letter showed that the projects being pursued in the side impact "cooperative" research activity focus on the development of subsystem tests.

This withdrawal of the rulemaking and the cooperative research substitute is inappropriate for several reasons. First, it contradicts the premise of the Administrative Procedure Act, that the agency rulemaking is to be conducted in a public forum, with equal opportunity for participation by all interested parties. Second, the withdrawal notice throws a veil of secrecy over the research and information needs of the agency in its quest to develop the standard. Interested parties cannot help identify key issues, publicly debate technical issues, or develop workable solutions.

Third, this notice ignores the substantial paper presented by two top agency engineers at the Society of Automotive Engineers in February 1982, which concluded:

> "In recent years the emphasis of the NHTSA side impact program has been on the development of a full-scale test procedure for use in reduction of chest injuries. This emphasis has led to the development of a new deformable barrier which can be used to simulate car-to-car collisions, the development of at least two dummies with special design features for use in side impact testing, the acquisition of a large bank of data on injury tolerance and several vehicle modifications which have potential for reducing chest injuries. Most of these elements of the program are nearing completion at this time. This work has also provided a basis for full-scale tests of pelvis protection. Performance criteria and dummy measurement capability of abdominal injury are under development. The next step will be the development of interior vehicle designs for abdominal injury reductions."

Thus, the first research activity selected by the agency for its "cooperative" program concerns the most important vehicle safety rulemaking underway in the agency which was discontinued without explanation to permit the agency to claim that its industry research program would not overlap with its rulemaking activities. Indeed, in a letter dated October 28, 1982, to Public Citizen, the agency states:

> As you can tell from the proposed projects which are now being pursued, this cooperation is not geared toward rulemaking. Instead, its purpose is to improve our collective knowledge and research base for enhanced safety performance.

NHTSA's "cooperative" research project is in fact a hand-picked industry advisory committee, established by the agency to provide advice and recommendations regarding the allocation of research funds and their use, and it is clearly illegal. These actions plainly make the group an advisory committee subject to the Advisory Committee Act. It is clear that the agency has not complied with the act which requires a charter, balanced representation, public notice of all meetings, with meetings closed only under very narrow circumstances. If steps are not taken immediately to correct this violation, Public Citizen intends to take whatever legal action is necessary, and we would certainly in that regard appreciate the advice and counsel of the subcommittees.

Reinforcing this point, last year NHTSA eliminated two public advisory committees, one on biomechanics and one on accident investigation and statistical analysis. Interestingly enough, these two issues are primary projects of the "cooperative" NHTSA/industry program.

In addition to undermining the independence of its vital vehicle safety research program, the NHTSA has discontinued all of its fuel economy research and, in addition, has discontinued the experimental safety vehicle program. The accomplishments and achievements of this particular program have already been discussed. I might add that the statute requires the existence of an experimental safety vehicle program, which the agency has now ignored.

I would also like to just mention that on September 27, 1982, NHTSA research engineer, Frank Richardson, stated that:

> It is NHTSA's judgment that substantial reductions of fatalities and serious injuries could be achieved with RSV-type structures and strengthened padding systems.

In 1980, the agency had estimated that some 15,000 lives could be saved every year if vehicles on the road emulated the RSV. Mr. Richardson concluded, and I quote, that "a disappointment of the RSV program management has been the inability to transfer the technical results either to the marketplace or even to NHTSA rulemaking engineers." Thus, although the safety technologies represent the state-of-the-art technology, the automotive industry has or refused to use and adopt this kind of life-saving technology in their production vehicles.

Additionally, I might say that in the 1981 budget a next step for the RSV program had been planned looking at a 4-passenger, 1,500 to 1,800 vehicle such as the Japan micromini vehicles are. It is very important because there is a move toward use of some of these vehicles in the United States.

In addition to this secret research program, which I think substantially undermines the credibility of the agency as well as its future capability to issue safety standards, a number of current programs are under attack which are vital to small cars.

The first has already been mentioned, which is automatic crash protection, which is by far the most important because of the frequency of frontal crashes. The second is in steering assemblies, which Dr. Haddon mentioned. This standard was less important because it was superseded by the frontal crash, automatic crash protection standard. Since the revocation of that standard, the steering assembly standard is very important, and it has not been updated, as Dr. Haddon mentioned, since the late 1960's and, indeed, on a petition from General Motors was recently cut back slightly.

The third is the safety belt program, which is the cornerstone of the Reagan administration's safety activities. I might say that there is an internal goal in the agency of 30 percent belt usage under this program in the near term. This means that there will still be 70 percent of the public unrestrained, admittedly unrestrained, if you only achieve 30 percent belt usage. We now have 10 percent belt usage. The internal goal is for 30 percent belt usage. By comparison, if you had automatic crash protection, you would have restraint protection in 10 years of all the population. So this program, which is not based on scientific fact—rather, it ignores scientific fact—is really not an important safety program for the future. If it works at all, which is doubtful, it is a long-term project. In the meantime, thousands of people are being killed on the highway.

I might also say that if one were really serious about a safety belt program, you would look at the other aspects that are important, comfort and convenience of belts—which is something the public complains about and which the agency revoked—unrestrained occupants and fixing up the interior of the vehicle in anticipation of unrestrained occupants for some time. These steps have not been taken.

The national speed limit, the 55-mile-an-hour speed limit that I have already mentioned, is not in favor in the Reagan administration but, in fact, it is critical for small car safety. Finally, I mentioned the large trucks.

In addition, the crash test information which has been critical to encouraging manufacturers to improve the safety of their vehicles has been similarly undermined because the information available has not been released to the public until the end of the model year for which the tests were done. Some of the 1982 data, for example, came out at the end of the 1982 model year, but most of it just came out the other day, 2 months after the end of that year.

That concludes my remarks and summary, Mr. Chairman. I would be delighted to answer any questions you may have.

[The prepared statement of Ms. Claybrook follows:]

Statement by Joan Claybrook
President, Public Citizen

Before the Committee on Science and Technology
House of Representatives

November 30, 1982

Mr. Chairmen, Members of the Science and Technology Committee:

Thank you for the invitation to testify today about small car safety research and development. As the former Administrator of the National Highway Traffic Safety Administration, I am vitally concerned with the Reagan Administration's abandonment of its statutory mandate to reduce deaths and injuries on the highway -- especially in our growing population of small cars.

This hearing is a timely one. As the population of small cars with their inherent safety problems continues to expand, the numbers of deaths and injuries on the highway will grow unless steps are taken by industry and government to improve the safety of these vehicles. Auto crashes are already the largest killer of young people in America under the age of 34, the primary cause of paraplegia and a major cause of epilepsy. Although the death and injury rate is down this year because of the downturn in the economy, death and injury in small cars continues to surpass all other passenger vehicles.

This phenomenon is not difficult to explain. For example, in 1979 while small cars made up only 38 percent of the cars on the road, occupants of small cars accounted for

55 percent of the deaths in two vehicle car crashes. In fatal crashes between subcompact and full-size cars, occupants of the subcompact cars are 8 times more likely to be killed than are the occupants of the full-sized vehicles according to the Department of Transportation. These trends are expected to continue with more small cars coming into use, and the likely importation of the micro/mini 1500 pound cars now popular in Japan.

In 1980, the Department of Transportation estimated that this trend, along with some increased travel, would result in an increase in automobile occupant death and injury from 27,000 deaths per year to approximately 43,000 deaths per year by 1990. These figures do not include the likely increase in deaths and injuries to occupants of light trucks and vans which have, like automobiles, dramatically decreased in size and weight.

This problem, however, is not as hopeless as it sounds. There are technological remedies available to mitigate the hazards presented by small cars. We already know, for example, that the motor vehicle crash safety standards implemented since 1968 have saved more than 80,000 lives in highway crashes. Safety standards already developed or in process could save many thousands additional lives annually. The research safety vehicles developed by the Department of Transportation demonstrate that the state-of-the-art of safety technology is available for the design of vehicles which can crash at 50 mph into solid barriers, the most severe type of crash, and at 40 and 50 mph car-to-car side impact without significant injury to the occupants.

In 1977, Secretary of Transportation Brock Adams acted to require more fuel efficient vehicles in the United States to conserve energy and to reduce America's dependance on foreign oil. At the same time we knew that the lighter weight vehicles could be far less safe than traditional American cars. For that reason, Secretary Adams in June 1977, simultaneously issued two critical vehicle standards: fuel economy requirements that would double the efficiency of cars on the road to meet the 1975 statutory requirements, and automatic restraints to protect occupants against death and injury in frontal crashes where 55% of the deaths occur. In terms of safety, the new requirements would make the smaller cars almost as safe as existing large cars. In addition, the agency was directed to develop new safety standards to reduce the hazards of small cars.

In terms of consumer cost, the NHTSA estimated that even after paying for the safety and fuel economy improvements required, the buyer of the more efficient 1985 model car would save almost $2500 over its lifetime compared to the buyer of the 1977 car (1980 figures).

Two months ago, Public Citizen published a report entitled: Reagan on the Road, the Crash of the U.S. Auto Safety Program, which documented how the Reagan Administration has brutally and unconscionably interrupted this thoughtful approach.

During the past 20 months it has ignored the law, it has ignored scientific facts, it has ignored non-partisan traditions in this program, and it has ignored its own staff recommendations. It has abandoned its independent research activities, initiating instead a so-called secret "cooperative" research project with the automotive industry. It has discontinued all fuel economy research as well as the oft-hailed Research Safety Vehicle program.

In terms of its current activities of particular importance to small car safety, it has revoked the automatic crash protection standard, it has weakened the collapsible steering column standard which needs to be improved, and it has stopped rulemaking on side impact protection. Side impact crashes kill 9,000 occupants each year. It has failed to release crash testing data until after the close of the relevent model year, and it has made this information harder to acquire and understand. It has publicly advocated revocation of the 55 mph speed limit, abandoned all 55 mph research, and failed to enforce the statutory mandate. And just today, the Department of Transportation is recommending overriding existing state laws in order to allow the enormous 65 foot double bottom trucks to travel from coast to coast, further jeopardizing the safety of auto occupants.

Approximately one year ago, the Reagan Administration decided to turn its research program over to the automotive industry when it secretly initiated the so-called "cooperative" automotive research activities first with Detroit companies and subsequently with importing companies.

While the agency claims that this program is not a secret one, it has issued no press releases announcing it to the public. The meetings are held in private without any prior public announcement or any invitations to the public or representatives of academic institutions. No other organizations or entities are allowed to participate in the research definition or activity. Although a public docket was established on May 19, 1982, this occurred 6 months after the first meetings with the industry. Subsequent materials were not placed in the docket until November 1, 1982, almost a month after Public Citizen complained about the withholding of these materials and filed a request for them under the Freedom of Information Act.

Covert government research is entirely inappropriate, and vigorous objections have been voiced by academic leaders such as Robert Hess at the Highway Safety Research Institute at the University of Michigan. The NHTSA is a regulatory agency granted the authority to conduct research in order to carry out its statutory purpose of issuing motor vehicle safety standards. The research activity is needed to acquire sufficient knowledge to make independent scientific judgments without relying solely on the claims of the regulated industry.

The advantage to the automotive industry of a cooperative research program with the regulatory agency is obvious. The various companies can avoid taking any initiatives, claiming that research is being jointly conducted and any action to improve vehicle safety would interfere with the joint research program. In addition, the research basis for future safety standards is entirely undermined by the diversion of agency resources away from this primary purpose to the so-called "cooperative" program.

Thirdly, the agency has revoked its most important pending rulemaking action for side impact protection to make side impact work part of the cooperative program. The agency attorneys would not allow "cooperative" research on pending rulemaking actions, but this advice was not revealed in the July 12, 1982, Federal Register notice revoking the rulemaking. The notice merely stated that the agency's research "has demonstrated that there are many questions remaining concerning the most appropriate test methodology and performance criteria and levels. Many complex issues have arisen which will require considerable time to resolve." The side impact withdrawal notice did say, however, that the rulemaking would be reopened "after research and analysis has progressed to the point that appropriate test methods and performance parameters can be developed, a process that would likely take a year."

Thus, the automotive industry behind closed doors is helping to "guide" and "design" research for the development of a rulemaking proposal. And it is hardly any accident that this particular future safety standard was selected for this program. Until recently, the agency has focused on the development of a dynamic crash test standard with an instrumented surrogate. The automotive industry has urged a test of vehicle subsystems, thus avoiding full-scale crash tests that reproduce the dynamics of the crash. As might be expected, the materials recently revealed by the agency in response to Public Citizen's Freedom of Information Act letter showed that the projects being pursued in the side impact "cooperative" research activity focus on the development of subsystem tests.

This withdrawal of the rulemaking and the cooperative research substitute is inappropriate for several reasons. First, it contradicts the premise of the Administrative Procedure Act, that agency rulemaking is to be conducted in a public forum, with equal opportunity for participation by all interested parties. Second, the withdrawal notice throws a veil of secrecy over the research and information needs of the agency in its quest to develop the standard. Interested parties cannot help to identify key issues, publicly debate technical issues, or develop workable solutions.

Third, this notice ignores the substantial paper presented by two top agency engineers at the Society of Automotive Engineers in February, 1982, which concluded:

> In recent years the emphasis of the NHTSA side impact program has been on the development of a full scale test procedure for use in reduction of chest injuries. This emphasis has led to the development of a new deformable barrier which can be used to simulate car-to-car collisions, the development of at least two dummies with special design features for use in side impact testing, the acquisition of a large bank of data on injury tolerance and several vehicle modifications which have

> potential for reducing chest injuries. Most of these elements of the program are nearing completion at this time. This work has also provided a basis for full scale tests of pelvis protection. Performance criteria and dummy measurement capability of abdominal injury are under development. The next step will be the development of interior vehicle designs for abdominal injury reductions.

Thus, the first research activity selected by the agency for its "cooperative" program concerns the most important vehicle safety rulemaking underway in the agency which was discontinued without explanation to permit the agency to claim that its industry research program would not overlap with its rulemaking activities. Indeed, in a letter dated October 28, 1982, to Public Citizen, the agency states: "As you can tell from the proposed projects which are now being pursued, this cooperation is not geared toward rulemaking. Instead, its purpose is to improve our collective knowledge and research base for enhanced safety performance."

NHTSA's "cooperative" research project is in fact a hand-picked industry advisory committee, established by the agency to provide advice and recommendations regarding the allocation of research funds and their use, and is clearly illegal. These actions plainly make the group an advisory committee subject to the Federal Advisory Committee Act, 5 U.S.C. App. I. It is clear that the agency has not complied with the Act which requires a charter, balanced representation, public notice of all meetings, with meetings closed only under very narrow circumstances. If steps are not taken immediately to correct this violation, Public Citizen intends to take whatever legal action is necessary.

Reinforcing this point, last year NHTSA eliminated two public advisory committees, one on biomechanics and one on accident investigation and statistical analysis. Interestingly, these two issues are primary projects of the "cooperative" NHTSA/industry program.

In addition to underming the independence of its vital vehicle safety research program, the NHTSA has discontinued all of its vehicle fuel economy research claiming it is unnecessary after revocation of the post-1985 fuel efficiency rulemaking. NHTSA argues that the marketplace provides a sufficient incentive. This, of course, ignores the fact that the manufacturers have always resisted abandoning the large, higher priced, more profitable vehicles, and that the Japanese and German governments are pressing their industries to design and market even more efficient cars by the 1990's.

The experimental safety vehicle program, first initiated in 1966, also has been abandoned. Under the agency's statutory mandate, the agency is required to have such a program. It is not surprising that the program has been discontinued. The automotive industry dislikes it intensely because the vehicles produced show that the state-of-the-art safety technology far exceeding the performance of current cars can be incorporated into stylish production vehicles at a modest cost. The most recent effort, initiated in 1974 during the Ford administration, resulted in the production of two research safety vehicles. One, produced by Minicars, is a brand new design which resulted in little or no occupant injury when crashed into a solid barrier at 50 mph and at 40 and 50 mph side impact with a vehicle of similar weight. The Minicars RSV weighs 2500 pounds and achieved 29-38 (city/highway) mpg fuel economy. The Calspan RSV, evolved from a 1976 model Chrysler Simca, represents conventional near-term state-of-the-art technology, weighs 2675 pounds and acheives superior crash performance levels of 40 pmh in front barrier crashes and 34 mph side impact protection. This performance far exceeds any production vehicles.

In a paper dated September 27, 1982, NHTSA research engineer, Frank G. Richardson, stated "It is NHTSA's judgment that substantial reductions of fatalities and serious injuries could be achieved with RSV-type structures and strengthened padding systems." In 1980, the agency had estimated that if all vehicles on the highway incorporated the safety provisions designed in the Minicars RSV, approximately 15,000 lives out of the 50,000 lost would be saved each year. However, Mr. Richardson concluded that "a disappointment of the RSV program management has been the inability to transfer the technical results either to the marketplace or even to NHTSA rulemaking engineers." Thus, although the safety technologies in the RSV represent state-of-the-art technology and their technical documentation has been available to the automotive industry worldwide since the middle 1970's, the industry has failed or refused to use this important life-saving technology in their production vehicles.

The next stage of the RSV program, planned in 1980, was the development of significantly smaller four passenger vehicles weighing between 1500 and 1800 pounds. This program is particularly important to develop safety technologies for cars of the late 1980's and 1990's. In Japan, for example, the micro-minis weighing 1500 pounds are already being sold, and presumably, while waiting for the next fuel crisis, are being readied for importation into the United States. This RSV project has been completely stopped by the Reagan Administration, and the staff has been dispersed. Nevertheless, the Administration went forward with the bi-annual experimental safety vehicle conference in Japan earlier this month. This was consistant with the Reagan Administration's tradition of pursuing public relations gestures, but not the underlying scientific and action forcing activities. The facade was somewhat undermined, however, when the NHTSA Administrator, in his only official assignment during the conference, failed to show up for his concluding remarks.

CURRENT PROGRAMS UNDER ATTACK

1. Automatic Crash Protection

Upon assuming office in early 1981, the Reagan Administration announced that it intended to delay and then finally revoke federal motor vehicle safety standards (FMVSS) 208, the automatic crash protection standard. This standard, issued in 1977, was due to take effect in the first of three phases in the fall of 1981. This critical standard was abandoned in spite of the growing death and injury rate in small cars, the availability of passive restraint technology that could reduce death and injury by at least 50 percent and the failure of the automotive industry to take any voluntary initiatives to provide improved crash protection in their vehicles. In 1979, the NHTSA estimated that without additional crash protection by 1990 the yearly death toll will increase by 15,000 over the current occupant death toll of 27,000 for a total of more than 42,000 lives. If the automatic crash protection had been implemented, it is estimated that approximately 9,000 lives per year and more than 65,000 serious injuries would be saved in the early 1990's. Thus, the actions taken by the Reagan Administration on the pretense of helping the auto industry will in fact condemn many thousand of Americans to future lives as parapelegics and quadrapeligies while thousands of families will grieve the loss of loved ones that might have been saved.

2. Steering Column Assemblies

Studies conducted by NHTSA on small car safety indicate that steering column performance was one of the three most decisive factors in vehicle crash performance and injury causation. Without a restraint system, the performance of the steering assembly is particularly critical. The federal safety standard for steering assemblies was first applied in 1968 model passenger cars. A NHTSA technical paper reported that in post-1968 passenger cars, there were 38% fewer serious to fatal driver injuries as a result of the steering assembly standard. The report also pointed out that there are several significant deficiencies in the test procedure for the current standard, indicating that human injury is less severe in laboratory tests than in real life crashes. The current standard requires a static test with a loading device pushing against the steering column which has been removed from the vehicle. There is no crash test and instrumented dummies measuring injury levels are not used. This standard was not previously updated because it was superceded by FMVSS 208 (automatic crash protection) which measured not only the performance of the restraint system but the interior of the vehicle, including the steering column. Although that standard has been revoked, the steering column standard not only has not been upgraded, but has been weakened. On October 1, 1981, NHTSA responded to a petition from General Motors, to change this standard to allow the company to build five degrees more tilt into its tilt and telescoping steering columns. The agency's justification was that the GM tests showing abrupt, short duration forces "apparently do not transmit potential injuries to the driver." Under the Reagan administration, it seems that the public has the burden of proof of showing that GM's approach is wrong rather than the usual regulatory approach of having the company prove its idea.

3. Safety Belt Program

The cornerstone of the Administration's so-called safety activities has been the development of a $10 million safety belt promotion campaign. The agency's "unofficial" goal is a 30% increase in belt usage. But this goal is not revealed. Instead, agency officials talk about the potential lifesaving if everyone wore safety belts.

But even if the 30% goal was achieved, it would still leave 70% of all vehicle occupants unprotected in crashes. Automatic crash protection on the other hand, would achieve this same goal of 30% in about three years and would protect all frontal crash occupants in 10 years.

The agency under the Reagan Administration is pursuing a program which has been tested in various forms by industry and government for the past decade and has never increased safety belt usage for any appreciable length of time. Yet, those activities which research has shown do work and are credited with saving more than 100,000 lives -- vehicle safety standards, the 55 mph speed limit, and motorcycle helmets -- have been abandoned.

The agency's lack of sincerity in pursuing the safety belt program is evidenced by its failure to take a number of significant steps. For example, it has not upgraded the safety belt requirements which, when issued in the middle 1960's, required only a static test for strength. It does not require a crash test or any measurement of occupant injury levels. In addition, the agency has abandoned the rulemaking proceeding to require improvements in the comfort and convenience of safety belts despite agency research studies showing that most people do not wear belts because they are uncomfortable and inconvenient. Indeed, a research report submitted to the agency on September 4, 1981, by Frank M. Newport and V. Lance Tarrance, Jr., which agency officials cite with regularity, states that one of the three major reasons people do not wear seat beats is that "they feel the belts are too uncomfortable." In addition, the requirements for improving the comfort and convenience of active belt systems in light trucks and vans has also been abandoned.

Changes in human behavior, even if they are successful, take many years to accomplish. But for the interim, the agency has taken no steps to protect the driving public in the short run either by rulemaking or by encouraging the automotive industry to upgrade and improve the interior occupant compartment. In their February 1982, paper entitled "A Search for Priorities in Crash PRotection," three top NHTSA engineers explained the importance of a forgiving interior compartment with a seat belt use program:

> "The use of occupant restraints is undoubtedly the single most effective measure for occupant crash protection. However, in spite of a potential full effectiveness of 50 percent when used, today's restrainsts have an overall net effectiveness of about 5 percent . . . thus, unless momentous increases in belt use are anticipated in the foreseeable future . . . improved protection for unrestrained occupants, shoulld receive a higher priority."

Additionally, the NHTSA in its seat belt promotion program has specifically excluded automatic safety belts which are now in some 500,000 vehicles on the highway. Although these belts are more likely to be used than active belts, the agency should certainly include their use in any belt promotion program. Instead, there is no mention of automatic safety belts in any of the safety belt literature, films, or othe promotional materials.

4. The National Speed Limit

The 55 mph speed limit, established by the Congress as a conservation measure, has saved over 54,000 lives as well as some 28 billion gallons of gasoline since 1974. This speed limit is particularly important for small vehicles which are less able to withstand the impact of a high speed crash. In its report, Small Car Safety in the 1980's, the NHTSA estimated that the probability of fatality doubles as crash speed increases from 45 mph to 60 mph and doubles again as the speed increases from 60 mph to 70 mph.

Ignoring the success of the speed limit, as well as its importance to small car safety, the Reagan Administration has called for its elimination. But since it does not have the political clout in Congress to revoke the existing law, it has used its administrative authority to undermine its effectiveness. Besides winking at token state fines for speeding, the Reagan Administration has taken other actions to signal its opposition.

The NHTSA has revoked the speedometer standard that highlighted 55 mph on speedometers and limited the top speed to 85 mph. The agency has also made it more difficult for states which support 55 mph to enforce the law. NHTSA has cancelled the third and most important part of a study examining automated speed monitoring devices. These devices would greatly assist state efforts to enforce the speed limit while reducing the need for additional manpower. The states can no longer take advantage of "state technical assistance teams" which NHTSA and the International Association of Chiefs of Police (IACP) sponsored to assist states develop cost effective enforcement techniques. After five years of preparatory work, NHTSA terminated a rulemaking that would have set standardized requirements for radar devices used by police in enforcing speed limits. Lastly, NHTSA has eliminated all research activities and all public information and education programs for improving enforcement.

5. Large Trucks

In its recent proposal for a five cent gas tax, the Administration is recommending that Federal law override existing State laws which prohibit the use of double-bottom trucks -- that is, a tractor with two trailers, one behind the other. Several of these states, primarily in middle America, have long prohibited the use of these vehicles on their highways because they are very large, difficult to maneuver and when a crash occurs, they devastate smaller vehicles. Needless to say, with the increasing population of small cars on our highways which are less crash resistent, this decision by the Administration just enhances the likelihood of increased death and serious injury. The federal preemption of state laws has always been a goal of the trucking industry and this change will allow double-bottoms to travel from east coast to west coast. Once again, the Administration has compromised the safety of Americans for a political accommodation.

6. Crash Testing Information

One of the major initiatives of the late 1970's by the NHTSA was a crash testing program called the New Car Assessment Program (NCAP) to assist consumers in understanding the crashworthiness of cars for their purchasing decisions. The crash test results published in 1979 and 1980 revealed that small cars were much less crash resistent than large cars, but that some small cars were better designed and could pass the crash testing criteria of 35 mph. In the agency's December 1980, report, "Small Car Safety in the 1980's," NHTSA safety engineers evaluated the crash test results and found that

> "based on engineering studies to evaluate the causes of vehicle failure in the NCAP [new car assessment program], the performance of many automobiles in a crash could be upgraded substantially with very little additional effort and cost borne by manufacturers. For example, a restraint system which greatly restricts the forward movement of a front seat occupant, thereby avoiding head strikes, could be incorporated for as little as $5 per vehicle. Similarly, steering column assemblies which absorb energy and do not move in a way that would enable head strikes or chest

> strikes could be incorporated for about $15 per vehicle. The majority of vehicles currently in production already provide a level of structural performance that could withstand a 35 mph barrier test. Thus, the costs of upgrading performance are very low."

The engineers also estimated that

> "in the case of incorporating a crashworthy design in a new vehicle or one already planned for redesign, the cost would be minimal. If additional vehicle structure is required, it is estimated that the cost should not exceed $50 per vehicle for the modification."

In 1980, in order to make the crashworthiness testing information readily available and easily accessible to the public, the NHTSA published The Car Book which was the most popular government publication ever released by the Consumer Information Center at Pueblo, Colorado. Some 1.7 million copies were requested by the public when it was made available free of charge.

While claiming to enhance public information, the Reagan Administration has discontinued The Car Book, and additionally, has not released crash test results until after the end of the model year of the cars tested. (For example, some of the 1982 crash test results were released on November 18, 1982, while some of the others have still not yet been released for the 1982 model year which ended in September 1982.) Thus, the agency's expenditure of funds and work in this area are useless to the consuming public.

In keeping with the Administration's pattern of withholding information from the public or selectively releasing it, new data concerning the impact of rollover crashes in small cars has been shared only with the automobile industry. In negotiations with the importing automotive companies concerning proposed "cooperative" research projects, the agency told the industry that "recent data from North Carolina files shows an eight-fold increase in rollover rate in going from a full-size car to a subcompact." This research, however, has not been revealed to the public so that this safety information can be included in their car buying decisions.

The irony of all this is that the United States is a leader in transportation technology with each new flight of the Columbia. And yet, the Reagan Administration fails to take a leadership role in promoting American transportation technology related to auto safety -- a technology that can save millions of human lives and billions of dollars.

Mr. **Glickman**. Thank you, Joan.

I have before me your "Reagan on the Road" book. In the back, pages 70 and 71, there is a colloquy between Mr. Peck and Mr. Wirth, who chairs a subcommittee on the Commerce Committee, in reference to the things that NHTSA is doing. They talk about $6 million being budgeted to their safety belt program, which I understand is probably low.

Ms. **Claybrook**. It is close to $10 million overall.

Mr. **Glickman**. They talk with respect to alcohol, we are allocating $10.5 million more than the agency has ever spent on alcohol. I wonder if that is buying liquor or what? It doesn't say exactly what it is supposed to be.

Ms. **Claybrook**. That is, in fact, an incorrect statement. In 1973, 1974, and 1975, Senator Birch Bayh, who was chairman of the Appropriations Subcommittee in the Senate, had allocated $88 million for a major attack on alcohol and highway safety. In 35 projects across the country, there were alcohol safety action projects which studied this issue and was actually quite active.

Mr. **Glickman**. Then Mr. Peck goes on:

> With respect to recalls, the fourth largest number of recalls ever undertaken by this agency occurred in 1981 * * * they occurred faster and more efficiently * * *.

How do you feel about that?

Ms. **Claybrook**. There was one large recall by General Motors of about 7 million cars, which is the reason that the numbers in that particular year were large. Absent that, it would have been one of the smallest.

Mr. **Glickman**. OK. Then he goes on to say:

> We are continuing with our research and development efforts in critical areas such as biomechanics and vehicle research. We are continuing to develop our RSV/ESV/ISV program to a degree that we will be able to actually produce results in fact in production vehicles. The VW contract that we now have underway, that is the logical extension of that research * * *.

What do you say to those things?

Ms. **Claybrook**. Well, they are just incorrect. I mean the RSV program has been discontinued. There is no funding of it. There is no office. There is no Office of Fuel Economy Research either. Those offices have just been dispersed.

Mr. **Glickman**. These comments between Mr. Peck and Mr. Wirth occurred in March of this year. So what you are saying is that, with respect to that latter statement on the RSV program, it is no longer an accurate statement?

Ms. **Claybrook**. It is no longer an accurate statement, and the office was in the process of being dispersed. The budget for 1983 had already been submitted by the President in which that program was zero funded.

Mr. **Glickman**. OK. The final thing is, "With respect to the consumers, we have made available more and in a more timely fashion information with respect to not only safety but consumer-related aspects of our program. We are now handling up to 800 calls a day * * *."

Ms. **Claybrook**. First of all, the statement that he makes overall is incorrect. In our "Reagan on the Road" report, in fact, we have a whole section on public information in which we documented that it is very difficult to get documents from the agency. They discontinued the Xerox contract. The chief librarian has never been replaced. She left in June 1981. So the library is much more difficult to manage and much less responsive to the public. Many publications are no longer being printed. A number of them were thrown away.

At the Consumer Information Center in Pueblo, Colo., for example, there used to be 15 or 16 NHTSA auto-related publications for consumers. Today, there is just one.

Mr. GLICKMAN. So what Mr. Peck says is not an accurate statement?

Ms. CLAYBROOK. No. Not only that, but the Car Book was discontinued, which was the most useful publication that we put out in terms of giving factual information to consumers. And Mr. Peck said that you can call the hot line and get this information. You can't call the hot line and get this information. You can call the hot line and ask for information on a particular make and model of a car. The point of the Car Book was to compare all the makes and models of cars so you could make up your mind and think about it. And you don't get the answer from the hot line. You get it in the mail.

Mr. GLICKMAN. When was the Car Book discontinued?

Ms. CLAYBROOK. It was discontinued when the Reagan administration took office. It had just been published in the fall or winter of 1980, and that they continued to distribute. But they have not republished it since then.

Mr. GLICKMAN. All right. Let me ask you this question: As you are well aware, you were a very controversial head of NHTSA to some people, and some people felt that when you were in charge the government was engaged in overregulation—I am going to say that on purpose just trying to simplify terms—overregulation of the industry, enactment of rules and regulations without proper basis, and failure of appropriate cooperation between the Government and the industry. I am not asking you to comment on those charges. I am not sure how relevant they are now. How would you characterize, in summary, the current role of that agency that you headed?

Ms. CLAYBROOK. I think that the Reagan administration has abandoned its responsibilities under the statute. The statute requires the agency to issue motor vehicle safety standards to reduce death and injury on the highway. Instead, they have revoked safety standards, which is going to result in an increase of death and injury on the highway, there is no question about it.

In terms of the priorities of the agency, under the Carter administration, we issued standards that were the most important lifesaving standards. Those are the very ones the Reagan administration has either discontinued—the ones that were in process—or has actually revoked, automatic crash protection, side impact protection, for example.

Interestingly enough, one of the proposals that was pending when I left was for the crash test data that was developed in the 35-mile-an-hour crash test to be put on the window sticker of every car just like the EPA fuel economy number so that the public, when they go to buy a car, can look at the way the car has performed in crash tests. The industry would do the crash tests and publish the information along with the EPA fuel economy number. Even that proposal has not been pursued in an administration which believes the marketplace would work. But the marketplace cannot work when the consumer does not have relevant technical information with which to make a judgment.

Mr. **GLICKMAN**. Why do you think that the Government is spending so much money on a seat belt advertising program in a zero fiscal prudence, so to speak? Why are we adding so much money on television advertising encouraging people to use seat belts.

Ms. **CLAYBROOK**. I don't see anything wrong with trying to encourage people to wear seat belts. But I think the way the Reagan administration is handling it is as a diversion, a diversion away from the things they are doing to undermine the safety program. In order to have something positive to say that is relatively harmless, they have pursued two major diversions, in my view. One is the safety belt program, and the other is this cooperative research program. It looks as though you are doing something, when, in fact, nothing is being done, particularly nothing that the Detroit auto manufacturers don't want done. They didn't like the RSV program and it was eliminated. They didn't like the fuel economy program and it was eliminated. They didn't like automatic crash protection and it was eliminated. They don't particularly like side impact protection and it has been eliminated. They don't mind data, so the data collection continues to go on. They don't mind seat belt promotions, so the seat belt promotion goes on.

Mr. **GLICKMAN**. Thank you.

Mr. Gore.

Mr. **GORE**. Thank you, Mr. Chairman.

Let me ask you the same question that I put to Dr. Haddon. Why do you think they are taking this course of action?

Ms. **CLAYBROOK**. I think it is an ideological position that the Government should not be involved in interfering in any way with the decisionmaking in private industry. Every action that they have taken is substantiated by that view. Nothing that the Detroit auto manufacturers want has not already at least been initiated, and most of it they have attempted to accomplish in a very timely fashion.

Mr. **GORE**. So in looking at their actions, it appears to you that the most important objective that they have is to make absolutely certain that nothing they do will in any way displease the large auto manufacturers?

Ms. **CLAYBROOK**. That is correct. They have made in NHTSA what I call a wholly owned subsidiary of the Detroit manufacturers.

Mr. **GORE**. This cooperative research project seems to fit in with that pattern. That sounds a lot like an advisory committee. You say in your prepared statement that you think it is an advisory committee.

Ms. **CLAYBROOK**. Under the law, we believe that it fits that definition, that is right. It is a continuing relationship of advice to the Government agency that occurs on a regular basis. It is very complex. I have a whole satchel of documents that I have finally gotten through the Freedom of Information Act. It is about 12 inches thick. There are subcommittees and task forces. There are regularly attended meetings.

Mr. GORE. Are public funds used?

Ms. CLAYBROOK. Public funds are used on the agency side.

One of the documents indicates that MVMA [the Motor Vehicle Manufacturers Association] said it had a shortage of funds for a project which it wants to sponsor with NHTSA. They said they have a shortage of funds for one particular project and they would like to have some help with the funding of that particular project.

Mr. GORE. Is the insurance industry represented on this committee?

Ms. CLAYBROOK. No, no other outside parties.

Mr. GORE. Are public interest groups represented?

Ms. CLAYBROOK. No.

Mr. GORE. In other words, they use public funds to set up a committee or a group to advise the agency on how to proceed in auto safety. Yet the point of view reflected in that group doesn't include the insurance companies that have to pay for the results of all these accidents, and doesn't include the public interest groups that monitor the problem. It only includes the automobile manufacturers.

Ms. CLAYBROOK. Yes; not only that, but it is more than giving advise, Mr. Chairman. It is actually divvying up the pie and deciding who is going to do which piece of research. One company will do this piece of research and NHTSA will do that piece of research. So it is actually dividing it up and making it very interdependent so that should this coalition, if you would, or cooperative research activity be split up, the agency would have certain missing links in its actual overall research program.

Mr. GORE. There is a law that requires groups like this where public funds are used in pursuit of an agency's responsibilities under law. That law requires such groups to reflect competing and different viewpoints about the problem to have a charter, to have open meetings, and to comply with the minimal due process guidelines to insure that the public is getting its moneys worth and that the program is operating fairly and effectively.

I take it that you are saying that that law is being violated?

Ms. CLAYBROOK. It is my belief that that law is being violated. It is not the first law that this administration has violated. They also haven't submitted, for example, two annual reports that are due. One was due July 1, 1981, and one was due July 1, 1982. They are congressionally mandated reports. Neither one of them have been submitted to the Congress as of this date. In fact, I would be glad to represent anybody on the committee who would like to sue the agency, because it looks as though pleading will not produce those reports. I think that only a court order will produce those reports.

Mr. GORE. Your testimony would indicate that the agency is showing similar contempt for several laws, as it has today for the request of these two subcommittees that the head of the agency respond to questions about this matter.

I would recommend to my cochairman that we consider asking the General Accounting Office for a legal opinion on whether or not there have been law violations by NHTSA as this witness has alleged.

Ms. **Claybrook.** I think that you ought to also ask the agency. It is my understanding that Mr. Peck was given advice to this effect.

Mr. **Gore.** I would like to ask Mr. Peck, but we have been through that. Perhaps he is on his way.

Ms. **Claybrook.** I think if you ask the general counsel of the Department of Transportation for a legal opinion, that would also be given.

Mr. **Gore.** Yes.

Let me ask you about the question of product liability laws. Mr. Peck was quoted in the Los Angeles Times as saying that under the current theory of product liability law, manufacturers are restrained from implementing the kind of safety improvements that have been incorporated in this research safety vehicle that we saw on film. How do you respond to that? I am not sure I quite understand what he is saying there.

Ms. **Claybrook.** What he is saying is that if one manufacturer—for example, let's take Honda. If Honda should incorporate those advanced technologies—and they are really not advanced, they are state of the art, but advanced for current production—in their vehicles and the other manufacturers don't, the buyer of a General Motors car injured in a crash could sue General Motors and claim: "You failed to incorporate state-of-the-art technology. Honda is doing it, why isn't General Motors?" Mr. Peck believes it is the responsibility of the Reagan administration to protect the manufacturers and there is nothing in the law to cover against such a suit, I guess, by suggesting that we should haven't advanced safety research shown to the public and encourage manufacturers individually to adopt it.

It is a ridiculous proposition. He has no responsibility for the product liability of General Motors or any other manufacturer. There is nothing in the safety statute that suggests that he does. Indeed, there is an exact provision in the safety statute which says that the 1966 law, as amended, the current law, does not have any relevance to cases brought under State or common law. So he has no responsibility to protect the manufacturers and there is nothing in the law to even suggest that he has that responsibility concerning any kind of product liability suit.

Mr. **Gore.** In other words, according to that theory, it would be to the detriment of the automobile companies to have a clear demonstration of improvements in safety technology because it would jeopardize them, it would expose them to expensive product liability lawsuits on the grounds that they did not incorporate improvements that were clearly demonstrated.

Ms. **Claybrook.** That is the point that he is making. Really, it is an anticompetitive point. I should think that his view as a representative of a marketplace-oriented administration should be the other way around, which is to say that here is the safety technology and any manufacturer that wants it—it is available, by the way, can use it. All the drawings, all the designs, all the engineering work have been available since 1975. So it has been available to any manufacturer that wanted to incorporate it.

I should think that if he is not in favor of issuing regulations—about which I disagree with him—but if he is not, he certainly ought to encourage manufacturers individually to sell safety in the marketplace and encourage them to use existing state-of-the-art technology to do that.

Mr. **Gore**. Let me conclude, Ms. Claybrook, by saying that I think the majority of my constituents, based on the information that has come through the media, probably felt that the pendulum under your administration when you were in charge of the agency was way too far to the left, and was oriented too far toward consumers, and imposing costs on the automobile companies, this resulted in higher price rises then really we wanted to think about.

Even people who take that view, I think the overwhelming majority of American citizens would find it troubling for the agency to adopt an approach that had as its single objective of making certain the agency did not do anything that displeased the executives of these few large manufacturers. There has to be a balancing. There has to be a balancing of their needs with the needs and demands of the public that we incorporate sensible, available safety improvements.

Ms. **Claybrook**. I don't disagree at all with that. I haven't seen any public opinion polls on the views of people in Tennessee on auto safety. But I have looked at them for many, many years, for 15 years for the population as a whole. For example, in 1978, Harris did a poll for Amtrak in which they said: "What is the most important improvement in transportation you would like to see?" And the answer came back, 83 percent said they wanted more auto safety designed into cars. So I don't think there is any misunderstanding by the public.

I would like to say, since you are the second member who has raised the issue about the extremists of the Carter administration in auto safety, that the standard that Brock Adams issued for automatic crash protection was a reissue of one first issued in the Nixon administration in 1971. The fuel economy standards were required by congressional statute. And those were the only significant standards, really, that were issued during that period of time. There was some upgrading of vans and light trucks; there was some planning done for pedestrian safety, where 10,000 people were killed each year; side-impact protection, where 9,000 people were killed each year; and there was the disclosure of information so that the marketplace could really work. Those were the major efforts made, including additional research, finishing up the 1974 RSV program. There was some very minor upgrading of standards.

But the concept was to have four crash test standards—the frontal crash test standard; the side impact one; a rollover standard, which is extremely important as we have learned for small cars, although the agency has never told the public that; and a rear crash protection standard.

Mr. **Gore**. Regardless of where you think the pendulum had swung to during your handling of the agency, there is no doubt that it has now swung way back over to the extreme right end of the spectrum, turning over the whole sheebang to the auto companies. That is not a responsible way to handle this safety program.

Thank you, Mr. Chairman.

Mr. **Glickman**. I think that Mr. Volkmer is next.

Mr. **Volkmer**. I wish to welcome you also, Ms. Claybrook.

I would like to go back very briefly to this advisory committee. I understand it relates only to the so-called cooperative research that is being done; is that correct?

Ms. CLAYBROOK. Right.

Mr. VOLKMER. It does not relate to whether or not there should be certain standards or the abandonment of certain standards that have taken place?

Ms. CLAYBROOK. No; there are rulemaking engineers who attend. The side impact protection standard, which was a pending rulemaking, was actually revoked on the advice of counsel, and the research is now being done jointly on side-impact protection. The agency has stated publicly in the Federal Register they intend to go back to rulemaking next summer. So I believe that there is an intermix here of research and rulemaking activity.

I would say that the major purpose of motor vehicle safety research in this agency is to prepare for issuance of standards. So also, in that sense, that is the major purpose of the agency. And I do not believe they ought to have just the auto industry involved in their research programs.

Mr. VOLKMER. Is the advisory committee—I understand from questioning, I don't know that much about it—made up solely from employees of the auto manufacturers in this country only?

Ms. CLAYBROOK. No; also the importing companies. They also are a part of this project.

I have called it an advisory committee. The agency hasn't called it an advisory committee. I have called it that because the way the activity is being carried out falls within the scope of something called the Federal Advisory Committee Act, and it is a requirement that when advise and counsel is given to a Government agency, it has to be constructed as an advisory committee and meet certain requirements of public——

Mr. VOLKMER. I realize that. I think there is a Senator that is a little upset about another advisory committee that may be going on.

The other thing that I would like to know is about the "Car Book" and its discontinuance. Is the information that could be used in the publication of the "Car Book" still available?

Ms. CLAYBROOK. Yes; but it is released very late. The 1982-model-car crash tests have not all yet been released, and they haven't been selling 1982 cars except for leftovers since September. So it is released, but it is released too late to be of use to the public, and it is released in a fashion which makes it very difficult to use and to organize.

One of the major reasons for publishing the "Car Book" is that we used to get all these letters and requests for information from people and we would have to answer each one of them individually. Really, in order to be more efficient and to better help the users, we decided to publish it all together. So we pulled together fuel economy information and insurance discount information and recall information and we put it together by make and model of car so people could look at it and figure out what they wanted.

Mr. VOLKMER. Did you add crash-test information?

Ms. CLAYBROOK. And crash-test information.

Mr. VOLKMER. So if I was a buyer or prospective buyer of a smaller compact car and I wanted this information at the present time for comparison, I couldn't get it right now?

Ms. CLAYBROOK. No, you couldn't. The "Car Book" for the 1982 models, absent much of this data that has only recently been released, was in fact published by one of my former colleagues who left the Government and decided to publish the book. That was done last December. It is my understanding that a third version, the 1983 version, is going to be published sometime, but not until after the first of the year because, again, the data isn't even there. In fact, the crash tests for the 1983 models, as far as I know, haven't even been initiated.

Mr. VOLKMER. Those are done by the Department of Transportation?

Ms. CLAYBROOK. The Department of Transportation.

Mr. VOLKMER. And not the car manufacturers?

Ms. CLAYBROOK. No; the car manufacturers do them, but they don't tell us about them.

Mr. VOLKMER. I see.

When you were the Administrator of this agency—just as a philosophical question—when you are doing research on safety and proposing standards, in your opinion, should a cost-benefit analysis be used in any way in proposing those standards?

Ms. CLAYBROOK. Yes; in fact, the NHTSA, for many years way before the Executive order that Mr. Carter proposed, and I believe even before the one that Gerald Ford put out in 1975, or certainly at least at the beginning of that time, has done cost-benefit regulatory analyses. I believe they are very important for decisionmakers to help them understand what the effects of a particular regulation are likely to be.

There is a real problem with benefit data, because it is very hard to acquire—and we have already heard in today's discussion the absence of some of that data—the NHTSA initiated a major program in 1975 which continues today, and it is still not complete, for fatal-accident data and accident-investigation data. I believe that the agency will probably talk about this when it testifies. The agency spends about one-eighth of its entire budget on this data collection and analysis. The major need, I think, today, and even when I was there, was for an analysis of this data. It is very complex and it needs a lot of analysis.

One of the projects that I undertook when I was there was to look at the fatal-accident data by make and model of car. And a report was submitted to the agency in March 1981 with this kind of information in it. To this date, that report has not been released. In fact, it was conducted by the son of one of your later witnesses, Mr. Donald Friedman. He did that work. You may want to ask him about that report.

But I do believe that regulatory analyses should be done and that the best data possible should be used.

Mr. VOLKMER. Thank you, Mr. Chairman.

Mr. GLICKMAN. Thank you.

Mr. Dunn.

Mr. DUNN. It is always a pleasure to talk with a supporter of the administration.

I can't think of a time in my 2 years here in the House a testimony as filled with demagoguery and as little of accurate facts and figures as what I have just listened to. I lost track of the number of times you used the words "secret," or "conspiracy," or "divergence." About the only thing I didn't hear you say is that you have a secret list of Communist pinkos in your pocket that you will reveal later on at the proper time.

Who is this industry? You keep using the word "industry." Who is to blame? Are we talking about five guys in a dark room?

Ms. CLAYBROOK. Manufacturers of cars.

Mr. DUNN. Do you mean the guy on the line who puts the bolt in, even though he knows it is a defective bolt?

Ms. CLAYBROOK. No. I believe the chief executive officers are responsible, just like the Administrator of an agency.

Mr. DUNN. The chief executive officer.

Ms. CLAYBROOK. Right.

Mr. DUNN. My understanding is that the Big Three are all corporations.

Ms. CLAYBROOK. That is right.

Mr. DUNN. And that the corporations are public-held corporations.

Ms. CLAYBROOK. That is correct.

Mr. DUNN. My understanding is that the stockholders elect the chief officers.

Ms. CLAYBROOK. That is correct. But if you think there is stockholder democracy in corporations today, I think you are sadly misled.

Mr. DUNN. I guess we would disagree. I don't think there is any conspiracy. I don't think there are four or five guys in some secret room that you suggest that rule the automobile industry.

Ms. CLAYBROOK. I didn't say that. I said the chief executive officer was responsible for the policies set up for the company.

Mr. DUNN. You think he is not liable to the stockholders of those corporations?

Ms. CLAYBROOK. I think that the stockholders of the corporation have the voting power, but they are so dispersed, they don't know each other, they can't communicate, and the one source of control is the corporation itself.

Mr. DUNN. So we are all being duped by the American automobile industry?

Ms. CLAYBROOK. Well, I hope not. I think we have done a pretty good job of resisting that.

Mr. DUNN. You suggest we are.

Ms. CLAYBROOK. No.

Mr. DUNN. Those stockholders, they don't know what they are doing?

Ms. CLAYBROOK. Do the stockholders not know what they are doing? I think that many stockholders are not well informed. I should note that last year at the General Motors annual meeting, the chairman of the board of General Motors wanted to have the public part of the meeting separated from the business meeting of the company, and suggested that it be held at a place outside of Detroit quite far away, a meeting that would not be attended by the top officers of the company. He was roundly criticized not only by consumer organizations, but by many, many other businesses.

Mr. DUNN. We are back to these secret meetings that are going on all over the country then.

Ms. CLAYBROOK. No, that wasn't a secret meeting. It was a public meeting, but he wasn't going to attend.

Mr. DUNN. I just don't understand the lack of facts that you present us. The facts that you do present disagree with everything I read.

Ms. CLAYBROOK. I have a book here that I would suggest you read—perhaps I should leave it and maybe you would like to read it. It has about 500 footnotes documenting what is in this report (Reagan on the Road—the Crash of the U.S. Auto Safety Program).

Mr. DUNN. Let's just take one of them. You said your study indicated that 83 percent of the buying public——

Ms. CLAYBROOK. That was a Harris poll, I didn't do that.

Mr. DUNN. Every public opinion poll said that the most interested factor in purchasing a car today was fuel economy.

Ms. CLAYBROOK. No. What Harris said in the Amtrak poll was, "What is the one major improvement you want in transportation?" And the answer was that 83 percent said they wanted improved vehicle safety.

Mr. DUNN. You are somehow suggesting that these car makers need to be forced by the Government, by the American public. How much should we force them. We are going to see a car later today, I guess it is outside, that would have a retail sales price of about $10,000. Should we ask the stockholders of General Motors or should we ask the American buying public, each and every one of us, to pay approximately $5,000 more per car than what you and I can go out and buy a car for today? You can buy a car for $5,000 today, not $10,250.

Ms. CLAYBROOK. Right.

Mr. DUNN. That we can accomplish the same thing by, first, making people put their seat belts on; and second, getting the drunk drivers off the road. That wouldn't cost you and I $5,000 per car. Those two factors, not the size of the automobile or the bend in the road or how far a car rolls, make up the majority of the fatality accidents in this country today. It wouldn't cost you and I a dime. I think it is a better alternative than spending $5,000 per car.

I know your cost figures, Joan, say $5 here or 3 cents here or 4 cents here. You have a different type of accounting procedure than everybody who manufactures automobiles.

Ms. CLAYBROOK. Let me cite some fact for you. First of all, Budd Co.—I presume that is a respected company in your view—published a report on the cost of manufacturing the RSV that you see outside. In 1980 dollars they estimated it would be—with advanced electronics on it—it would be about $7,000, and without the advanced electronics on it, it would be about $6,000. Whatever the inflation rate has been since 1980, that would be the price in the marketplace today. It is not $10,000. So it is probably closer to $7,500, which is a fairly modestly priced car, particularly for what you are going to get from it, which is this enormous increase in safety quality. We today pay $500, for example, a year minimum for health insurance, and yet health insurance won't protect you against the kind of risk that you are talking about in auto crashes, it will only help repay you in the end. So this is a prevention measure.

In terms of drunk driving and in terms of wearing seat belts, I don't disagree with you on those issues. I think they are very, very important. But it seems to me that when you have 50,000 people killed every year or injured and the human trauma that families all over the United States suffer, you don't want to say let's just do this or let's just do that. You want to say let's try to approach it comprehensively. That is what the NHTSA has done since the day that it was founded. It has two different statutes that it administers, one for vehicle safety and the other for highway safety, and all of those programs are included.

In the activity that is likely to cause a crash, drunk driving is a very critical factor, very critical factor, as is the weather, as is the design of the highway. A lot of different factors play a role in it. The likelihood of having an injury, however, is mostly governed by what happens inside the car, the wearing of the seat belt and the design of the car itself.

I was presented when I was Administrator with the issue of whether or not to support mandatory seat belt-use laws which, as far as we know, in the world with all the research that has been done, it is the only thing that has really dramatically increased seat belt usage, except for the automatic restraints. I rejected that because I did not believe that the enforcement cost to the public and the anger that would result from a mandatory seat belt-use law was worth it. Instead, we decided to pursue the requirements for child restraint usage, to start when the baby is first born with the concept of using restraint systems in the car and look toward a generational behavior change, something I think is very, very important.

But the cost of enforcing drunk driving laws, the cost of enforcing seat belt usage laws and the difficulty of all of that in terms of punishment and the rest is an enormous cost. It is probably much more costly than fixing up cars with modest safety improvements that can be done when you redesign cars.

No, you don't have to have regulation, not if the manufacturers take these initiatives on their own. But we have now had almost 20 years of experience since that law was enacted, where the public rose up and the Congress said improve the safety of vehicles, and it hasn't happened voluntarily. There is some improvements cars, but there has not been the vast improvement that is feasible.

Mr. DUNN. But you use the cost factor, so you are concerned about costs in saving lives, and I have some argument with even putting a value on a life. I am merely suggesting that there are alternatives to regulatory type of actions that your agency followed. I guess I disagree with you in terms of cost to the public of enforcing drunk driving laws.

Ms. CLAYBROOK. I think they should be. I am just saying don't dismiss them as not costing a penny, because they cost a lot. Drunk driving enforcement is very expensive, particularly if it is done right. Alcoholic rehabilitation—two-thirds of the drivers arrested are alcoholics, you know. We have cut back under the Reagan administration on the funding of alcohol rehabilitation. It is very expensive for families if you have an alcoholic in the family, and it is very difficult to control. So it is not inexpensive; it is very expensive.

I personally believe that—and along with your colleague, Mr. Collins of Texas, whom I have talked to about this at length in various hearings—that there ought to be a tax on alcohol, a user tax if you would, that would fund alcohol rehabilitation.

Mr. DUNN. I don't want to get the alcoholic beverage people after me.

I thank you.

Mr. GLICKMAN. Thank you.

Mr. Walker.

Mr. WALKER. Did the automobile manufacturers go to computer-aided design as a result of the Government forcing them to do that?

Ms. CLAYBROOK. No. They did that for production efficiency and it has been very, very important for safety because, in fact, they have improved the structure of their cars. The U.S. manufacturers, in fact, did that in the mid-1970's. It is my belief that this is one of the reasons why the differences between small American cars and small imported cars showed up as they did, not only the steering column but also the structure.

Mr. WALKER. So, in fact, the manufacturers did find a way to build safer cars, we are driving safer cars as a result of that, and there was absolutely no Government mandate for them to do that. They did it because they wanted to build a better product, right?

Ms. CLAYBROOK. I don't believe that. At the time they did this, the standard for automatic crash protection which measures the whole structure of the vehicle was pending. And the manufacturers, when they went to redesign their cars, particularly when they down-sized their cars, they improved the structure because it was much cheaper to do it then and avoid having to do it later.

Mr. WALKER. That contradicts what you just told me. You told me they put it in because they wanted to improve efficiency on their production, and now you are telling me something different.

Ms. CLAYBROOK. No. I said they used the computer systems for improving their efficiency. I didn't say they put the better structures in for efficiency.

Mr. WALKER. But the computer-aided design is what has permitted them to do that, and what you are telling me is that they did that on their own, the Government didn't mandate them to do that. As a result, they are building a better product and building a safer product; isn't that right?

Ms. CLAYBROOK. There are two different steps, Mr. Walker. One step is they used computer-aided design for efficiency. No. 2 is they used that computer-aided design to build better structures, and I believe that was done because of the pending automatic crash protection standard which measured the structure of the vehicle in a crash.

Mr. WALKER. You don't think it has anything to do with the fact that they were also improving quality and doing a lot of those other things with computer-aided design and that called for better structures in the automobile?

Ms. **Claybrook**. I believe they did it in anticipation of a Federal standard.

Mr. **Walker**. Why would they have to go to computer-aided designs?

Ms. **Claybrook**. They did that for efficiency. When they had that computer-aided design, they used it to put a better structure in. I believe they did that in order to anticipate the oncoming Federal safety standards.

Mr. **Walker**. The point is that what they are doing is building safer cars, that the Government mandate never about, and the fact is they are still going on to building better cars right now. They are still improving the structures in the cars. I follow the automobile industry fairly closely through automobile magazines and a lot of that sort of thing that I read. We are going to have even better cars 3 years from now than we have got today as a result of what is going on in the computer field. None of that is being mandated by the Government. The standards that you wanted to impose that would have cost the taxpayers of this country and cost the automobile buying public hundreds of dollars, perhaps thousands of dollars, haven't gone into effect, and yet we are still getting better cars and we are getting safer cars.

Ms. **Claybrook**. The standard was in effect until a year and a half ago, and they can't undesign the cars that are already on the highway or the ones that are already——

Mr. **Walker**. We have new generations of cars coming out right now. They are already being designed and being put on the road. We have got brand new generations right now.

Ms. **Claybrook**. I know that.

Mr. **Walker**. They are being built better than the generation that preceded them. You don't believe that?

Ms. **Claybrook**. Some of them are.

Mr. **Walker**. That is not because of Government mandate, is it?

Ms. **Claybrook**. First of all, the American public in its buying habits certainly doesn't agree that all the cars coming on are better. They have obviously made some distinctions in——

Mr. **Walker**. No; it is because of price, primarily. Once again, since you want to cite polls, let's cite some polls. The polls show that the price the American people have had to pay for these cars, when they walk in and see the sticker shock, they are deciding that they can't afford that kind of automobile, particularly a small car, at the kind of prices that we are charging for them.

They are also saying that the interest rates and a number of other things are too high as a result of too much Government intervention in the economy. When you want to talk about the broad base of decisions that are made by administrators in Washington or administrators in companies, I think you ought to look at the broad base of decisions that are made that have tremendous effect on the whole economy of the country, too. When you take one of the basic industries of this country, up the price of the product by 10 to 20 percent as a result of Government mandates, then you have had a tremendous impact across the board in the economy. That is what I think most of your testimony, most of what you write in your study, and so on, tends to ignore. You cite all the rest of these peripheral costs, but you never cite the cost of the whole economy of having an automobile industry that is flat on its back.

Ms. **Claybrook**. I do not believe that the automobile safety standards, nor does anyone else that I have ever heard of believe that the automobile safety standards had anything to do with the downturn in the economy or the downturn in the sale of vehicles——

Mr. **Walker**. Cost does. Those have added costs over the years.

Ms. **Claybrook**. OMB did a study of the cost of vehicle regulation and found that the safety regulation was 3 percent of the total cost, that it is the cheapest of all. In the last decade, the auto safety agency has issued three standards that have cost the American consumer more than $10. The automatic restraint standard to which you referred would have been 95 percent or more, automatic belts, which have a minimal additional cost. According to Mr. Nordhouse, who used to be on the Council of Economic Advisers, the industry data itself shows it is only about $5 more cost per car for the automatic belts.

The air bags manufactured in mass production are very inexpensive compared to the price for a small volume. The mass production numbers, according to the suppliers of air bags who certainly have an interest in making money on them, for 2 million units was about $185 a car. Now that is an expensive add-on. Then you talk about vinyl roofs which the manufacturers promote like mad, that is $120. Or you talk about an AM–FM radio and exterior trim package, and it costs more than an air bag.

So, I don't think that you can say by any means or by any kind of accusation——

Mr. **Walker**. Those are buyer preferences.

Ms. **Claybrook**. Not always.

Mr. **Walker**. Let me give you an example. Your statistics become phony because they don't talk about the fact that during the whole period of time, the manufacturers were also having to anticipate standards that you might bring on line, and because of one of those anticipated standards, principally the rollover standard, they eliminated a whole line of automobiles, namely, the convertibles.

Ms. **Claybrook**. That is not true at all.

Mr. **Walker**. That is one of the things that the American buyer is now coming back to in droves. They are now deciding that that is something they want to have on the road.

Ms. **Claybrook**. What eliminated the convertible was air-conditioning. It had nothing to do with vehicle safety standards at all.

Mr. **Walker**. If was simply air-conditioning, people are buying air-conditioned convertibles right now. They were buying air-conditioned convertibles a few years. It is, in fact, a very popular product line right now.

So, what I am saying is there are some things that the buying public really wanted that were eliminated from product lines, that were changed in product lines, in anticipation of standards, and some of those things have had an effect in the downturn of that automobile economy. That, in fact, has rolled over into a problem for the whole economy.

What I am saying is that, in many instances, the manufacturers have done things themselves, without Government mandate, that have in fact improved safety more than any of the Government mandates carried out. For example, computer-aided design has made a major contribution to safety in this country. That is not something Government mandated. I think it is high time that we begin to recognize some of these things rather than have cars that are designed by some bureaucrat downtown or designed here on Capitol Hill. I hate to think of the end product my colleagues would come up with if they were given the chance to design an automobile.

Ms. **Claybrook**. I can only say that that car was not designed by bureaucrats, it was designed by a former GM research engineer.

In terms of the convertible, you really are mistaken about that. I don't know where that information came from to you. But the safety standards had absolutely nothing to do with the phase out of convertibles. That was entirely buyer preference and auto manufacturers' decisions.

Mr. **Walker**. The fact that they would have to go through and tool a car, you are saying that that had absolutely nothing to do with it? That is your statement?

Ms. **Claybrook**. That is correct.

Mr. **Walker**. And the fact they would have to go through and tool a car differently because they had to provide roll-bar technology, and so on, if they were anticipating that when they were designing new cars, it had absolutely nothing to do with the idea that 3 to 5 percent of their market——

Ms. **Claybrook**. The standards haven't changed and the convertibles are back. How come they have convertibles back?

Mr. **Walker**. Because there is no rollover standard. They never went into effect.

Mr. **Glickman**. Would the gentleman yield?

Mr. **Walker**. Yes.

Mr. **Glickman**. We have somebody from GM that will be here after Ms. Claybrook that could probably testify on that.

Let me just make one more point. It looks like we have a vote. I think that the issue here that Mr. Walker brings out when we get through all of the rhetoric is that we should not discount cooperation between industry and Government. It does work in many areas. For example, the FAA and NASA have learned over the years how to get cooperation with industry in coming up with regulatory research programs. I think Ms. Claybrook is saying that we don't want to turn over that research and the regulatory-setting agenda entirely to industry.

Ms. **Claybrook**. That is correct.

Mr. **Glickman**. That is a government function. I guess that is your point in terms of the nature of this advisory committee. If you let industry set the agenda on the regulatory problems, then it doesn't become an independent process.

Ms. **Claybrook**. That is correct.

Mr. **Glickman**. But I want to make the point again that we do have cooperation in aviation safety. We do have the cooperation whereby industry does have a significant role in trying to advise the Government on what are the safety functions, what should the regulatory functions of Government be, and where should that safety research be going.

Ms. Claybrook. I am not opposed to cooperation, Mr. Chairman. I think that is very important for me to say, because I didn't mean to imply that. This is called a cooperative program by way of giving it a nice name. The whole issue of having industry take the initiative, of course, is critically important. Industry has a huge amount of knowledge and if it does not share that and use it, then the whole population loses.

I don't think that there has been strong leadership by the manufacturers for either selling safety, which very few of them have done, or building improved safety into their vehicles. There are many different technologies available where that hasn't happened.

I would certainly hope that the manufacturers would feel, either out of this hearing or maybe from the cooperative research program—as it is called—that there are some initiatives that they should have an obligation to take. In fact, that would be a very interesting question. In the last 2 years, there has been a reduction in regulation, not an increase. Maybe you should ask the manufacturers what initiatives they have taken, what is it that they can show you in the last several years where they have taken a safety initiative. It would be very important for the public record because they certainly haven't told the public.

Mr. Glickman. We have a representative from General Motors coming up after you. I think that is an appropriate question to ask them.

Again, I point out, as I understand your thrust, giving an advisory committee the authority to set the research agenda as opposed to participating in a true advisory situation is different than the kind of cooperative spirit that we have in NASA or the FAA.

But I would have to say that there is a role for cooperation. We are seeing everybody else in the world engaging in this. I don't want to get in such a confrontive role that we can't have that cooperation. But I do agree with you on your base premise.

Mr. Dunn. Mr. Chairman.

Mr. Glickman. Let me just make one more comment.

I think that the fact is through all of this is that you have 50,000 to 60,000 and they are estimating 70,000 people a year that are going to be killed in automobile accidents, and I would go back to the point that that would be the equivalent of an American Airlines DC-10 crash every single day of the year. You know that the American public won't tolerate one airplane crash, not one. So I think that the key to everything you are saying is the American public has to remain in position not to tolerate an excessive amount of fatalities in automobiles.

Yes, Mr. Dunn.

Mr. Dunn. I just wanted to highlight what you just said about cooperation between a similar agency, NASA, which does the same kind of research that NHTSA does. There are meetings between NASA people and aircraft manufacturing people, and there are no allegations such as you made earlier that this might be an inappropriate use of public funds and suggestion for scrutiny by the U.S. Congress simply because that, in some of these meetings, some public interest groups weren't invited. The chairman and I have sat in on many meetings with NASA and aircraft manufacturers, and no one on this committee is suggesting that we also scrutinize those meetings to see if it is misuse of public funds.

You seem to be saying something different here than what you said before, and I appreciate that.

Ms. **Claybrook.** I am just saying that I think, under the existing statute, the auto safety statute and the advisory committee statute, the agency does not have authority to do what it is doing. I am not familiar with the FAA statute. I would be glad to take a look at it and see whether they have some exemption.

Mr. **Glickman.** Thank you very much, Ms. Claybrook.

I would like to ask Mr. Finkelstein—not to try to put you on the spot, but perhaps it will have the effect—is Mr. Peck with you?

Mr. **Finkelstein.** No, he is not.

Mr. **Glickman.** Does Mr. Peck intend to be here today.

Mr. **Finkelstein.** Mr. Peck is at a meeting of the Drunk Driving Commission.

Mr. **Glickman.** I am informed that he is not a member of that committee. What is he doing there then?

Mr. **Gore.** Mr. Chairman, if I might make a suggestion. In order to increase the likelihood that Mr. Peck's other meeting, which suddenly came up, might be concluded and that he might have a chance to come here as he had told us he would, I would recommend that we ask Mr. Finkelstein to be the last witnesses, hopefully accompanied by Mr. Peck, and go next after the break for the vote to Mr. Martin and then Mr. Friedman, and save the agency testimony until the end of the hearing so as to maximize the chance that Mr. Peck will be able to show us the courtesy of coming.

Mr. **Finkelstein.** Mr. Peck has, I believe, informed the committee that it was always questionable whether he would have been able to make it because the Presidential Drunk Driving Commission has been scheduled and has been on the agenda for a number of months now. He hoped that the schedule could work out.

Mr. **Gore.** That is not our understanding. Our understanding was that there was some question about how long he would stay and what time during the day it would be convenient for him to appear. We assured you and his staff that we would bend over backwards to make it possible for him to stay the maximum amount of time. We were not prepared for him to just say he wouldn't appear.

So, I would recommend that we hold the agency's testimony until the end of the hearing in hopes that Mr. Peck will be able to attend.

Mr. **Finkelstein.** I will try to contact Mr. Peck.

Mr. **Glickman.** We will move next to Mr. Martin, but we do have a vote. We will take that vote and we will be back in about 10 minutes.

[Recess.]

Mr. **Gore.** The subcommittee will come to order.

We would like to call now Mr. David Martin, automotive safety engineering director for the General Motors Corp. Mr. Martin, we are delighted to have you here. We thank you.

Without objection, your entire statement will be included in full in the record at this point. We will invite you to proceed either with a summary of those portions as you see fit or the whole statement, whatever you desire.

STATEMENT OF DAVID MARTIN, DIRECTOR, AUTOMOTIVE SAFETY ENGINEERING, GENERAL MOTORS CORP.

Mr. MARTIN. Thank you, Mr. Gore.

I have a condensed oral statement and, with your permission, I will proceed with that condensed statement.

My name is David Martin, and I am director of automotive safety at General Motors. We submitted a written statement and a number of attachments to the committee, and I will summarize those statements for you.

The National Highway Traffic Safety Administration's fatal accident file provides evidence that occupants of small cars experience more risk of injury in a collision than occupants of cars of greater mass. Many people have recognized this intuitively for a long time, and the technical community understands it because it is a result of the laws of physics. General Motors' findings in this area generally support NHTSA's analysis.

By the way, I would like to just add, if I may, that we agree with Dr. Haddon that the increased risk of injury and fatality in small cars is not associated with driver age. It is a matter relating to the vehicle size and the vehicle mass and the laws of physics. As we point out in our statement, clearly there is a driver age effect, but that occurs in all cars. There is no question that young drivers, particularly of the age of about 20, get in far more accidents than would be indicated by the number of miles that they drive.

Action can be taken to offset the effects of an increased number of smaller cars. At GM we are studying ways to improve the vehicle. The material, human and technological resources needed to build and maintain better roads already exist and should be utilized. We are pleased that public policies and State laws are emerging to encourage wider use of child restraints and seat belts and discourage drunk driving. GM strongly supports all of these efforts—and all will be needed.

It is important to understand that when we talk about small car safety and the challenge of improving it, we are not saying small cars are unsafe. We believe they are safe, although in relative terms. They, like anything else, are safer than some things and less safe than others. For example, if we look at the effects of different activities on people's average life expectancy, we see that, statistically speaking, driving a small car rather than a large car is not likely to shorten your life as much as smoking cigarettes or drinking alcohol or being 20 percent overweight. In fact, if one drives a small car instead of a large car, it will decrease one's lifespan by about 2 months, while living in the city compared to living in the country will reduce it by 1 to 5 years. Again, that is statistically speaking.

It is just as troublesome to continue to define small car safety in terms of large car safety, because many of the same technological advances and safer driving laws that will improve small car safety will also affect large cars. Since improvements realized in one area can also be applied in the other, the gap between small car and large car safety is not necessarily narrowed.

For all these reasons, it is not as useful to discuss small car safety in relative terms. Instead, our objective should be to make improvements wherever practicable in the small car, the small car driver's behavior, and the small car's driving environment.

Almost half of the 32-passenger car lines General Motors offers can be classified as subcompact or compact cars, and many of the remaining lines are intermediate-size cars. Virtually all the results of GM's safety research and development activities can be applied to small cars as well as large cars. These activities include the collection and analysis of field accident data, the use of math models to improve safety at the design level, extensive product testing and the development of new injury assessment technology.

Information on the field performance of small cars is available to us through the General Motors field accident research program. Established in 1967 to gather feedback data on the performance of energy-absorbing steering columns, this collection system now provides a bank of accident data covering both occupant injury and car damage. We supplement this by access to outside data banks such as the Government's Fatal Accident Reporting System and the National Accident Sampling System.

The information such data banks provide on our vehicles' field performance plays a significant role in GM car design programs and in vehicle safety development in general. We believe that increased emphasis by the Federal Government on field accident data gathering would enhance our safety research efforts.

To manage the energy of a crash effectively, a car must crush at a controlled rate and in specific locations. For this reason, a good deal of our overall design effort involves a vehicle's structural characteristics. Today, GM uses computer modeling to identify the effects of stress on a vehicle and to determine how design changes will affect a vehicle's weight and structural efficiency, and to evaluate how drivers and passengers interact with vehicle interiors in a crash.

In concert with the analytical work, we evaluate the crash dynamics of a vehicle by mounting partial vehicle structures on special sleds and crash testing them. Then we measure the forces, deflections and decelerations the vehicle structures and their dummy occupants have undergone.

In addition to hundreds of component tests, we conduct about 250 full-scale automobile crash tests each year. Information from these tests helps us design cars that manage more efficiently the energy dissipated during a crash. As vehicles become smaller, these efforts to provide the maximum amount of energy absorption per kilogram of weight become especially important.

General Motors is also making advances in product testing with the help of a new anthropomorphic dummy that enables us to evaluate more accurately human responses to crashes. Our dummy, known as Hybrid III, features response characteristics that are much more faithful to available biomechanics data than those of earlier dummies. We have provided the design and performance data for the Hybrid III to the NHTSA.

Basic biomedical research performed at the GM research laboratories on human impact tolerance provides the foundation for this work. As a matter of fact, our biomedical research activities, which began in the 1950's, led to many of the tolerance values used in NHTSA's safety standards today.

I might add in response to some of the earlier conversation about what the industry does on its own initiative, that our studies on improving the crashworthiness of vehicles did begin back in the 1950's, before Federal regulations came into place. Improvements were made to the vehicles in the areas of door latches and hinges on the basis of field accident information that came to us from Cornell Aeronautical Laboratories. Improvements in the steering system were initiated in the late 1950's, again on the basis of field accident information that came from Cornell Aeronautical Laboratories. The high penetration resistant windshield was introduced in 1966, again in response to field accident information that instructed the automobile manufacturer on how to improve its cars. Our improvements in crash test dummies have been given to the NHTSA. The injury tolerance values have been published in the public domain. We have made innumerable improvements in the vehicles, and those improvements are continuing today, absent regulations in the areas to which they apply.

It is difficult to say what technological improvements may lie ahead. But I would venture to guess that nothing we have done or ever could do to improve the design and structure of our vehicles will have as great an impact on the safety of small car occupants as prudent driving and wearing a seat belt.

The importance of the driver in traffic safety is obvious in a comparison of the fatality rates of drivers in different age groups. Consider, for example, that middle-aged drivers are involved in fatal accidents at only about one-quarter the rate for younger drivers.

Small car drivers may instinctively recognize the role they play in providing for their own safety through prudent driving. Seat belt usage rates among owners of Chevrolet Chevettes and Volkswagen Rabbits are three to five times average usage rates. In fact, those surveyed reported wearing their seat belts more often in these small cars than in another car they owned or in one they had owned previously.

Because we are convinced of the lifesaving potential of seat belts, we are supporting the NHTSA's national seat belt effort with an innovative employee belt use program that relies on positive incentives, as well as a national advertising campaign. We believe NHTSA's program has the potential to be successful because it involves many segments of society acting in concert. In Michigan, we are backing mandatory belt use legislation. Mandatory usage would bring immediate benefits to all drivers since almost every car on the road today is equipped with seat belts.

Finally, the U.S. highway system has proved itself to be the safest system of roads anywhere in the world, and we as a nation have available to us the human and technological resources needed to upgrade the safety conditions of U.S. roads even further. Unfortunately, the funding to apply those resources has not been forthcoming.

To summarize, large cars naturally provide more protection for occupants than small cars. This is not to say that small cars are not safe; in fact, they involve considerably less risk than many other everyday activities. Nevertheless, some of the risks associated with driving or riding in a small car can be reduced, and the better the public understands this, the better informed they will be in choosing and driving their vehicles.

Thank you.

[The prepared statement of Mr. Martin follows:]

Statement
by
General Motors Corporation
to the
U.S. House of Representatives
Subcommittee on Investigations and Oversight
and Subcommittee on Transportation
Aviation and Materials
of the
Committee on Science and Technology

Washington, D.C.
November 30, 1982

Good afternoon. My name is David E. Martin, and I am Director of Automotive Safety at General Motors Corporation. I am pleased to be with you today as part of this committee's effort to gain a better understanding of small car safety.

The National Highway Traffic Safety Administration's (NHTSA) fatal accident file provides evidence that occupants of small cars experience more risk of injury in a collision than occupants of cars of greater mass. Many people have recognized this intuitively for a long time, and the technical community understands it because it is the result of the laws of physics. General Motors' findings in this area generally support NHTSA's analysis. We have learned, for example, that occupants of the largest passenger cars have only one half the fatality rate of occupants of the smallest cars, and they experience much less risk of injury.

Such information has led NHTSA and others to forecast a substantial increase in the number of fatalities on American roads as the trend towards smaller cars continues. This prediction may be valid if all relevant factors remain constant. But they need not -- in fact, they almost certainly will not. Some factors are bound to change, including the size of the nation's fleet, the distance we travel, and the way the average driver age is changing. The United States is, after all, becoming an "older" nation and statistics show that older drivers are involved in accidents less frequently than youthful drivers, regardless of the size car they are driving.

In addition to such changes, which are evolving naturally, deliberate action can be taken in certain areas to offset the effects of an increased number of smaller cars. At General Motors, we are studying ways to improve the vehicle. The material, human and technological resources needed to build and maintain better roads already exist and should be utilized. We are pleased that public policies and state laws are emerging to encourage wider use of child restraints and seat belts and discourage drunk driving. GM strongly supports all these efforts.....and all will be needed.

We welcome and share this committee's special concern for the safety of those who drive or are passengers in small cars. By focusing on this matter, the committee can make the public more aware of the safety issues associated with small cars. This can help car buyers make vehicle choices that are appropriate for their individual circumstances, and increase public appreciation of the value of seat belts and the importance of alert, defensive driving.

Today I would like to describe for you how General Motors views the issue of small car safety and what we are doing to improve the safety characteristics of all our vehicles.

Thinking About Small Car Safety

It is important to understand that when we talk about small car safety and the challenge of improving it, we are not saying small cars are unsafe. We believe they are safe, although, in relative terms, they -- like anything else -- are safer than some things and less safe than others. For example, if we look at the effects of different activities on people's average life expectancy, we see that, statistically speaking, driving a small car, rather than a large car, is not likely to shorten your life as much as smoking cigarettes, or drinking alcohol, or being 20 percent overweight. In fact, if one drives a small car instead of a large car it will decrease one's life span by about two months, while living in the city, compared to living in the country, will reduce it by one to five years -- again, statistically speaking.

It is just as troublesome to continue to define small car safety in terms of large car safety, because many of the same technological advances and safer driving laws that will improve small car safety will also affect large cars. Since improvements realized in one area can often be applied in the other, the gap between small and large car safety is not necessarily narrowed. If we are to evaluate our progress, we must identify specific improvements in small car safety that can be made.

Finally, if small car safety today is measured against the past, its level will vary with an individual's perspective. There have always been some drivers who chose small cars. From the point of view of those individuals who drove Austins, Bantams, Ramblers, Henry J's and Crosleys, small car safety today has actually improved.

For all these reasons, it is not useful to discuss small car safety in relative terms. Instead, our objective should be to make improvements wherever practicable in the small car, the small car driver's behavior, and the small car's driving environment.

Small Car Safety Efforts at GM

Almost half of the 32 passenger car lines General Motors offers can be classified as subcompact or compact cars, and many of the remaining lines are intermediate-size cars.

Virtually all the results of GM's safety research and development activities can be applied to small cars as well as large cars. These activities include the collection and analysis of field accident data, the use of math models to improve safety at the design level, extensive product testing and the development of new injury assessment technology.

This research and development is not simply a response to government safety regulation, although a substantial amount of money is spent each year to meet safety standards. The concept and development work for many major safety improvements, such as the energy-absorbing steering column, was accomplished before the emergence of federal safety standards. In fact, when standards were introduced, they were generally written to enforce developments already scheduled for production.

Some of our research leads us to change the structure of our large cars differently than we do that of our small cars. However, we apply most of the technology we develop to all new car programs, large and small, in much the same way. As a result, all our vehicles are improved, with the laws of physics always giving a safety advantage to larger cars.

Field Accident Research Program

Information on the field performance of small cars is available to us through the General Motors Field Accident

Research program. Established in 1967 to gather feedback data on the performance of energy-absorbing steering columns, this collection system now provides a bank of accident data covering both occupant injury and car damage. When an injury is reported or when the vehicle is towed from the scene of the accident, a detailed collision and injury report and photographs of the vehicle are obtained. These data then are evaluated, coded, and stored in a computer bank in a form suitable for analysis.

Our banks of personal injury data and vehicle damage information are supplemented by access to outside accident data banks such as the government's Fatal Accident Reporting System and the National Accident Sampling System.

The information such data banks provide on our vehicles' field performance plays a significant role in GM car design programs and in vehicle safety development in general. It helps us to identify the sources and frequency of injuries and evaluate the effectiveness of various countermeasures. We believe that increased emphasis by the federal government on field data accident gathering would enhance our safety research efforts.

While field accident data gathering benefits safety research directly, this is not true, unfortunately, of all government safety projects. For example, we are quite aware of the results of NHTSA's Research Safety Vehicle (RSV) program, but we find NHTSA's field accident data much more helpful than the information from their experimental safety vehicle program.

Better Crash Energy Management by Design

To manage the energy of a crash effectively, a car must crush at a controlled rate and in specific locations. If a particular structure is too stiff, excessive forces may be transmitted to the passengers. On the other hand, if it yields too quickly, it may crush too much, too soon -- or in the wrong place -- injuring vehicle occupants. For this reason, a good deal of our overall design effort involves a vehicle's structural characteristics.

Today, GM uses computer modeling to identify the effects of stress and force on various parts of a vehicle and to determine how design changes will affect a vehicle's overall weight and structural efficiency. Another computer model evaluates how drivers and passengers interact with vehicle interiors in a crash. These computer programs make it possible for us to refine vehicle structures to a greater extent before we build and crash-test prototypes. The smaller, more fuel-efficient vehicle lines introduced in recent years have benefitted directly from this design capability.

Product Testing

In concert with the analytical work, we evaluate the crash dynamics of a vehicle by mounting partial vehicle structures on special sleds and crash testing them. Then we measure the forces, deflections and decelerations the vehicle structures and their dummy occupants have undergone. Sled tests performed early in the development of a vehicle can be used to help verify predictions made earlier with computer modeling.

In addition to the hundreds of component tests we run each year, we conduct about 250 full scale crash tests of automobiles. We have been conducting tests like these for half a century, but today's tests provide more information than ever before. For example, strain gages enable us to measure the relative strength of many parts of a vehicle structure. This help us understand at what point in a crash each major part of the vehicle structure achieves its ultimate strength. We use this information to design cars that manage more efficiently the energy dissipated during a crash. As vehicles become smaller, these efforts to provide the maximum amount of energy absorption per kilogram of weight become especially important.

Injury Assessment Technology

General Motors is also making advances in product testing with the help of a new anthropomorphic dummy that enables us to evaluate more accurately human responses to crashes. Our dummy known as Hybrid III features response characteristics that are much more faithful to available biomechanics data than those of earlier dummies. Hybrid III also better enables us to evaluate potential injuries to the thoracic, cervical, spine, knee and leg structures. This goes far beyond the capability of our earlier development, the Hybrid II, which is the standard dummy currently used by NHTSA and the rest of the safety community. We have provided the design and performance data for Hybrid III to NHTSA.

Basic biomedical research performed at the GM Research Laboratories on human impact tolerance provides the foundation for this work. As a matter of fact, our biomedical research activities, which began in the 1950's, led to many of the tolerance values used in NHTSA's safety standards today.

Driver Behavior and Small Car Safety

Significant progress is being made in vehicle safety, and it is difficult to say what technological improvements may lie ahead. But I would venture a guess, that nothing we have done or ever could do to improve the design and structure of our vehicles will have as great an impact on the safety of small car occupants as prudent driving and wearing a seat belt.

The importance of the driver in traffic safety is obvious in a comparison of the fatality rates of drivers in different age groups. Consider, for example, that middle-aged drivers are involved in fatal accidents at only about one-quarter the rate for younger drivers.

Small car drivers may instinctively recognize the role they play in providing for their own safety through prudent driving. Seat belt usage rates among owners of Chevrolet Chevettes and Volkswagen Rabbits equipped with manual belt systems are three to five times average usage rates, for example. In fact, those surveyed reported wearing their seat belts more often in these small cars than in another car they owned or in one they had owned previously.

It is evident from records of highway injuries and fatalities that such behavior is not common enough. We are encouraged, though, by evidence of its existence. It suggests that small car drivers may be more receptive than most drivers to efforts to improve their driving habits because of their heightened perception of risk.

One particular aspect of driver behavior, the use of seat belts, would have a dramatic effect on small car safety. Our analysis shows that the safety differential between unrestrained occupants of a large vehicle and a small vehicle in a frontal barrier collision can be eliminated in many cases if the occupant of the small vehicle is buckled up. Field accident data continue to document the value of seat belts.

Because we are convinced of the lifesaving potential of seat belts, we are supporting the NHTSA's national seat belt effort with an innovative employe belt use program that relies on positive incentives, as well as a national advertising campaign. We believe NHTSA's program has the potential to be successful because it involves many segments of society, acting in concert. Details on our employe belt use program and copies of our print media advertisement have been submitted to the committee. In Michigan, as we did in Oregon, we are backing mandatory belt use legislation -- and we will support such legislation in other states that consider it as well. Mandatory usage would bring immediate benefits to all drivers since almost every car on the road today is equipped with seat belts.

Another area where much work needs to be done is drunk driving. The United States' highway safety record is second to none, but, according to the Presidential Commission on Drunk Driving, the proportion of our accidents that involve alcohol is the highest in the world. GM is giving its support to that commission, and testified to it recently on possible applications of technical countermeasures to deter impaired drivers. A copy of our hearing statement also has been submitted to the committee.

In addition to the vehicle and driver, the driving environment plays an important role in highway safety. GM is a long-time supporter of a strong federal highway program, and recently appeared before a Congressional committee studying the growing need to provide for the preservation of U.S. highways. The U.S. highway system has proven itself to be the safest system of roads anywhere in the world, and we as a nation have available to us the human and technological resources needed to upgrade the safety conditions of U.S. roads even further. Unfortunately, the funding to apply those resources has not been forthcoming.

Summary

To summarize, large cars naturally provide more protection for occupants in a crash than small cars. This is not to say small cars are not safe; in fact they involve considerably less risk than many other everyday activities. Nevertheless, some of the risks associated with driving or riding in a small car can be reduced, and the better the public understands this, the better informed they will be in choosing and driving their vehicles.

At General Motors, advanced research is improving the safety characteristics of all our vehicles. In addition, we are participating in the NHTSA program to encourage voluntary belt use, we are attempting to build support for mandatory seat belt use legislation in the states, and we are contributing to efforts aimed at deterring drunk driving.

General Motors believes strongly that the issue of small car safety can best be addressed by a comprehensive approach in which the technical research being conducted by automobile manufacturers is complemented by public policies aimed at providing safer roads and encouraging safer driving.

Thank you.

Mr. GLICKMAN. Thank you, Mr. Martin.

Is your office in the Troy Technical Center?

Mr. MARTIN. The Warren Technical Center, yes.

Mr. GLICKMAN. Our subcommittee visited that center. I think we met you at that time, as I recall. Maybe not.

Mr. MARTIN. I am sorry, sir, I don't recall.

Mr. GLICKMAN. It was a couple of years back.

First of all, I appreciate your comment that our proceeding here today will increase the public appreciation on the value of seat belts and defensive driving. But, as you know, and as you mentioned in your statement, we are also concerned here with technological solutions to the problems of the increased risk to driving a small car.

For instance, NHTSA recently withdrew—or not too recently—a notice of proposed rulemaking that would have eventually dictated standards for side impacts. I presume you are aware of this regulatory action on their part.

Mr. MARTIN. Yes.

Mr. GLICKMAN. Was this standard technically unfeasible for the automobile industry to make?

Mr. MARTIN. That standard had not progressed into a notice of proposed rulemaking. As I recall, that was an advance notice of proposed rulemaking. My memory may be faulty on that. I don't believe that they actually had a specific proposal.

Mr. GLICKMAN. OK. But assuming it were a proposal, would that have been a standard that was technically feasible for the auto industry to make?

Mr. MARTIN. I can't speak to a hypothetical proposal. I would have to be able to examine the proposal to know whether or not it was feasible or whether or not it would provide value to the public.

Mr. GLICKMAN. Where are you, General Motors, in terms of developing side impact protection?

Mr. MARTIN. We have undertaken a very comprehensive review of our field accident data in order to identify improved tests that will promote improved safety design. The area in which these data have been reflected in terms of product changes is the area of structural changes on the side of the vehicle, improved structural integrity on the side of the vehicle.

Mr. GLICKMAN. We talked with Ms. Claybrook a lot about this cooperative Government-industry research that NHTSA testified about earlier. I wonder if you could tell us the role of the automakers in that program?

Mr. MARTIN. The Motor Vehicle Manufacturers Association is engaged in research on a coordinated basis with the NHTSA. This is not a rulemaking activity. This is an endeavor to identify tests that will promote safer vehicle design, tests that recognize field injury mechanisms, so that the test that is selected will relate to field conditions. It does not address the question of what the performance level should be.

Mr. GLICKMAN. Who determines—meaning you or the government—what items will in fact go into testing?

Mr. MARTIN. The field accident data suggests the type of test that should be conducted.

Mr. Glickman. The field accident data. Does that mean then that General Motors or Ford or American Motors, or whomever, doesn't make independent suggestions on where those tests would occur? I am not saying that is nefarious. I am just trying to get a feel about how this cooperative research effort will work.

Mr. Martin. I am not personally involved in the selection of tests. I simply know that the tests that are being selected are being selected on the basis of the way people are actually being injured in the field. But I am not personally involved.

Mr. Glickman. Whose data is that, accident data? Is that yours or the Government's?

Mr. Martin. I believe both data are being used. I believe that we have made our data available from our Motors Insurance Corp.'s accident cases which have been published.

Mr. Glickman. What I am trying to get is that, for the typical American driver, is this data providing enough foundation for the kind of research that needs to be done in an independent way or is the data being used to, let's say, promote specific kinds of research the automobile companies would like to have and perhaps research away from regulatory solutions?

Mr. Martin. As I stated before, the purpose of the research is to identify how people are being injured in the field from the best available accident and injury data. It has no bearing on who wants what. It has to do with what will promote a better product.

Mr. Glickman. What is the status of this program now?

Mr. Martin. I am sorry, I did not come prepared to talk about this particular activity, so I am straining my memory a bit. But I believe that there has been a report prepared on the first phase of the field accident data analysis.

Mr. Glickman. One of the complaints that Ms. Claybrook brought before us, and in fact our staff has indicated, is that while NHTSA has told us in very general terms what proposed research areas they will be moving into, we have really no way of knowing how they were chosen or who was involved in the process. There seems to be no public component to this. I wonder if you might comment on that?

Mr. Martin. I was completely puzzled about Ms. Claybrook's remarks. There is nothing secret about this information. We have talked about the fact that there has been a cooperative effort with the Federal Government in our public remarks.

Mr. Glickman. OK. There does not seem to be any public knowledge, though, of the process. I guess that is what my question is to you.

For example, NASA and the FAA has a lot of their safety research determined through the use of advisory committees, technical committees that work in some way like this proposed cooperative program. But there is a great deal of public input into that process. Most of the decisionmaking is public. How they decide what projects they are going to pursue is public. I guess the question to you is, is this a relatively closed and secret society by which the auto companies and the Government, without any kind of public notice, decide what research projects they are going to pursue?

Mr. **Martin**. I think the concept of this being a closed and secret meeting is nonsense.

Mr. **Glickman**. OK. It may be. I don't see that. NHTSA hasn't provided us any sort of, either formal or semiformal, operating procedure for this cooperative project. As a member of this body trying to deal with public funds, I am trying to make sure that we have system that is working.

Mr. **Martin**. I am sorry. I am unable to answer your question, Mr. Chairman.

Mr. **Glickman**. I have a final question. Do you think the research safety vehicle program has been brought to its logical conclusion, or are there more technological innovations that can be developed to improve automobile safety? Your testimony seems to indicate that the RSV was of relatively little use to your company, so I would like to combine those two questions.

Mr. **Martin**. Yes. I believe that in terms of what can be helpful to the automobile manufacturers, as I tried to indicate in some of the supplementary remarks I made in my statement, things that have really helped us, really guided us in coming up with things without regulations, such as improved windshields, improved door latches, energy-absorbing steering columns and side guard beams, was field accident data. We would like to encourage the Government to put more stress on that and less stress on crash testing vehicles to demonstrate that a particular vehicle can meet a particular laboratory performance level. We can do that, but we can gain much more help from the Government if they would expand their field accident data programs.

We think that the thrust began several years ago at NHTSA, and their field accident data program was excellent. All we would suggest is that they do more of it. We think that they are bringing it along, and we just encourage more of it.

Mr. **Glickman**. Did you say that you think they ought to deemphasize the crash test program? I want to clarify that for the record.

Mr. **Martin**. Yes. I believe that experimental programs devoted to the question of whether a particular laboratory test goal can be achieved are relatively unproductive.

Mr. **Glickman**. You mean there are no spinoffs or side benefits to that?

Mr. **Martin**. I didn't say no spinoffs. I said they are relatively unproductive. They are not anywhere near as instructive to us as good field accident data. That is really the foundation of product improvement.

Mr. **Gore**. Would my colleague yield?

Mr. **Glickman**. Yes.

Mr. **Gore**. I really find it hard to believe that you take that position. You are saying that these tests to run cars into obstacles with the kind of slow-motion film which show very clearly how the steering column, if it is not made right, can serve as a spear to hit the driver—you are saying that that kind of testing ought to be stopped?

Mr. **Martin**. The type of testing I was alluding to were related to experimental safety vehicles. Crash testing of our products is the sort of thing that we get into very deeply. As I indicated, we conduct about one crash test every working day. Every working day, we conduct a full-scale crash test.

Mr. GORE. Of vehicles that are already built?

Mr. MARTIN. No. These are development vehicles or prototype vehicles that instruct us on how to improve our product. Our work at our facility, the safety lab at Milford, is very important to us.

Mr. GLICKMAN. You are not talking about the regular crashing to determine——

Mr. MARTIN. No. We do that all of the time. I thought Mr. Glickman's question was: Is an experimental safety vehicle such as the RSV instructive to us? I do not find those vehicles to be very instructive.

Mr. GORE. Take the example of the steering column being driven into the head of the driver, as we saw with one of the cars in that film. Why wouldn't it be useful to experiment with other designs that prevented that problem and then crash test that experimental design to see if the correction avoided the problem?

Mr. MARTIN. That is what we do. We have a very comprehensive program evaluating the crash performance of our vehicles. That is why we developed our injury tolerance criteria back in the 1950's. That is why we developed the improved dummy, so that we could run those tests and improve our product.

Mr. GLICKMAN. But you don't think the Government's role in that is productive at all?

Mr. MARTIN. I don't think that the experimental safety vehicle is anywhere near as valuable to the manufacturer as good field accident data, which the Government could help provide.

Mr. GORE. So you think that the safety vehicle testing ought to be discontinued?

Mr. MARTIN. I think that the Federal Government can be more helpful to the manufacturer by expanding its field accident data programs than by conducting experimental safety vehicle crashes. We do that type of work every day ourselves. We run a crash test every day.

Mr. GLICKMAN. You talked a little bit about the cooperative research programs. If you could, I would sure appreciate your supplying for us, in just letter form if possible, information regarding the research program with the Government in terms of General Motors' perspective. I don't have any feel—perhaps we will get this from NHTSA—but from your perspective, I would like to know what exactly General Motors is doing with the Government with respect to this cooperative research program. Are their formal agreements between you and the Government? Maybe we can get this—but I am not sure we can—from Mr. Peck's office. I would like to know what kind of Government requirements there are on you and is there any public notice you have to make in terms of the cooperative research programs? I am not getting a very good feel of what this effort is.

Mr. MARTIN. I understand.

Mr. GLICKMAN. You don't have all the information right now to give us, and you candidly admitted that. I think it would be useful to have more information from General Motors' perspective. I think this could be supplied by a letter to the committee giving us your focus, your orientation on how you got into this program and what requirements there are on you, what financial requirements, and, I think, inasmuch as it is a contract or a relationship with the Government, you would have no problem supplying most of that information.

Mr. MARTIN. I see no problem.

[The information follows:]

General Motors Corporation

January 20, 1983

The Honorable Albert Gore, Jr.
Chairman, Subcommittee on Investigations
and Oversight
Committee on Science and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Gore:

On November 30, 1982 I was privileged to testify about small car safety before your subcommittee and the Subcommittee on Transportation, Aviation and Materials. This letter is intended as a response to questions raised but not fully addressed at that hearing. The same letter is being sent to Mr. Glickman.

On the subject of variability in vehicle crash ratings, I offered to provide for the record a copy of a GM paper presented at the 1980 International Automotive Ratings Symposium in Lancaster, Pennsylvania (Attachment 1). The paper addresses the limitations of using laboratory testing to predict a vehicle's actual crashworthiness in real accidents and the importance of validating laboratory results with field accident data.

A second subject that appears to have captured the committee's interest is the coordinated research being conducted by automobile manufacturers and the National Highway Traffic Safety Administration (NHTSA). GM participates in this particular effort voluntarily, through the Motor Vehicle Manufacturers Association (MVMA). This undertaking, as well as other areas of current industry-government cooperation, was described by GM Vice-President Betsy Ancker-Johnson at a media briefing on safety issues that GM conducted at its Milford, Michigan Proving Ground June 7, 1982 (Attachment 2). You may be interested to know that copies of this speech were included in more than 500 press kits distributed that day to members of the media and since then to other Proving Ground visitors.

GM is proud of the coordinated research that is being undertaken and we are greatly encouraged by it. We proposed this type of coordinated research at a public meeting with NHTSA in 1980 (Attachment 3) in response to Transportation Secretary Neil Goldschmidt's call for a new era of public-private cooperation. At that time, we proposed in particular the study of suitable test strategies for evaluating side impact protection, observing that:

> The safety community's understanding of how to make and measure other improvements is in its infancy. It is not yet clear what testing procedure is best suited to evaluate vehicle improvements ... NHTSA (should) develop specific tools and test procedures and publish them for evaluation by the entire safety community.

We are pleased that, in keeping with this objective, representatives of NHTSA and MVMA will present a progress report on coordinated research on side impact to the International Congress of the Society of Automotive Engineers next month.

GM's March 5, 1980 submission to NHTSA on possible rulemaking on side impact emphasized that we were already pursuing such research in this area and we urged the government to initiate a coordinated effort. This is significant -- that the research GM is undertaking as part of the current industry-government program is work that likely would be performed otherwise, although perhaps less efficiently. It is important to note also that NHTSA and MVMA are coordinating research to determine what test procedures can best address real world injuries and their discussions do not involve the overall stringency of any rule.

In the area of side impact research, GM has been involved in four NHTSA/MVMA task forces that (1) collect and analyze available accident data, (2) study potential ways of testing a vehicle's capacity for side impact protection, (3) study biomechanical and injury criteria related to side impact testing, and (4) propose test methodologies for full vehicle and component tests.

Although side impact protection is the area where research is furthest along, additional task forces have been formed to (1) coordinate an exchange of crash data to verify computer simulation models, (2) discuss ways to gather the factual information that will help harmonize international lighting standards, (3) develop candidate test procedures for evaluating steering assemblies, (4) find ways to adjust motor vehicle accident data for exposure, (5) study the potential of improved computer simulations of driving conditions, (6) compare past efforts in the areas of biomechanics and human tolerance measurement to determine where future efforts can best be applied, and (7) investigate accident reconstruction as a potential source of improved biomechanical information.

The committee also asked me to describe the extent of GM's contribution to the NHTSA/MVMA coordinated program. It is difficult to do that for elements of the program that are not yet very advanced, however we can provide an estimate of GM's contribution to coordinated side impact research. Because much of the research involved in the side impact program would be undertaken anyway, it would not be appropriate to include the cost of all related research in estimating our contribution. Excluding such research, our best estimate of activities directly related to our participating in this program to date is about 1000 man hours plus travel and incidental expenses.

I hope this information will be useful to you. For the sake of completeness, I would request that this information be included in the record of the hearing.

Sincerely,

David E. Martin

David E. Martin
Director, Automotive
Safety Engineering

Attachments

Attachment 1

AUTOMOTIVE RATINGS: THE TECHNOLOGICAL CHALLENGE

Presented by: David E. Martin
Director, Automotive Safety Engineering
General Motors Corporation

at the

International Automotive Ratings Symposium

Lancaster, Pennsylvania

December 9, 1980

AUTOMOTIVE RATINGS: THE TECHNOLOGICAL CHALLENGE

INTRODUCTION

General Motors favors the concept of rating systems which can be instructive to the consumer . We have the greatest confidence that our products will measure up favorably. Indeed such comparisons that we do see in the literature have generally had good advertising potential. However, we have not tapped that potential because we believe that a rating scheme should not be used until it has been demonstrated as providing meaningful purchase information to the consumer.

This paper outlines the type of validation that we believe is imperative to providing the consumer reliable purchase information. In the course of the paper some rather critical remarks are made regarding existing crash testing and injury assessment technology. General Motors wishes to emphasize that this criticism is meant to be constructive. Hopefully the reader will keep in mind that we are being critical of a technology that is largely the creation of General Motors. The Hybrid II (the basis for the Part 572 Dummy), and the Hybrid III dummy, came from our Safety Research and Development Laboratory. Also, the Injury Criteria for head, chest and femur have all drawn upon the pioneering efforts of the GM Research Laboratories. This is largely our technology. We developed it and we use it to improve our products. Our concern is, that it not be misused. Our engineers can use it as a doctor uses an X-ray -- with expert professional judgment. We use many types of data in evaluating and improving our products that may or may not be applicable to generalized vehicle rating schemes that would provide useful information to the public.

THE CONGRESSIONAL MANDATE

The United States Congress, through enactment of Title II of the Motor Vehicle Information and Cost Saving Act, has charged the DOT with the task of developing methodology to determine the characteristics of passenger motor vehicles relative to their:

1) damage susceptibility

2) crashworthiness, and

3) ease of diagnosis and repair

The NHTSA must then devise means to communicate this information to the public,

> "...in a simple and readily understandable form in order to facilitate comparison among the various makes and models of passenger motor vehicles...."

> "...so as to be of benefit in their passenger motor vehicle purchasing decisions."

Congress obviously intended that such information be presented in a form that has meaning to the consumer, not just test engineers, by providing that the information must be in a "simple" and "readily understandable" form. The contemplated "benefit" is the enablement of consumers to use the information in their passenger motor vehicle purchasing decisions, by facilitating a comparison among the various makes and models of passenger motor vehicles with respect to the specified characteristics.

The technological challenge is the development of automotive ratings that do indeed reflect a determination of these characteristics and are of benefit to the consumer. The source of such ratings may be described as "historical" (recorded field results) or "predictive" (some type of laboratory test that will allow a "prediction" as to a car's field performance).

While historical ratings ultimately may prove to be the only practical approach, our focus for this paper is on predicting crashworthiness since that is where we believe the greatest technological challenge lies and because the predictive approach is obviously the more desirable from the standpoint of getting information to the car buying public as early as possible for a new model. Also, crashworthiness predictions are receiving much current publicity. By narrowing our focus, we will be able to discuss specific capabilities and limitations rather than speak in generalities. Similar considerations exist for rating damageability and ease of diagnosis and repair.

CRASH TESTING VS. CRASHWORTHINESS

General Motors does a great deal of crash testing, and we find it a useful tool, among others, in product development. Therefore, we were not surprised that our new vehicles performed well in the recent NHTSA crash tests. However, we believe that the NHTSA 35 mph barrier crash tests and results cannot currently provide an adequate assessment of "crashworthiness" which is appropriately defined in Title II as:

> "...the protection that a passenger motor vehicle affords its passengers against personal injury or death as a result of a motor vehicle accident."

Motor vehicle accidents occur in many different modes and at many different speeds, and with all sizes of people in the vehicles. Since drivers do not select the kind of accident they will experience in their individual vehicles, the Congressional intent is obviously to provide an indication of the relative injury risk between cars as they may be involved in all sorts of accident configurations. The ideal situation would be to discover a laboratory test, or short series of tests, that would fully describe real world experiences. Unfortunately, such a test series does not exist. Certainly, frontal type barrier crashes, even at a variety of test speeds, do not satisfy the Title II definition of crashworthiness.

Nevertheless, it is true that roughly half of all fatalities occur in frontal type accidents, so the NHTSA's choice of a frontal barrier crash test as one type of frontal accident to examine is understandable. Accordingly, let us first consider what can be done with the existing technology and then determine what additional steps would be required to provide a meaningful and sufficiently comprehensive vehicle rating system for just frontal type impact conditions.

While this narrow crash mode selection cannot begin to address "crashworthiness" in all its respects, it will be instructive to outline the magnitude of the technological challenge of defining and completing just this small aspect of the overall task.

EXISTING CRASH TEST TECHNOLOGY

A major factor in a meaningful assessment of the protection that a motor vehicle affords to its passengers against personal injury as a result of a motor vehicle accident is the quality of the human surrogate. The Part 572 dummy specified in FMVSS 208 is widely used to provide a measure of certain injury-related criteria but should not be considered as a basis for formulation of a uniform and reproducible rating scheme. Recent development of improved dummies such as the GM Hybrid III may provide the means for surpassing the accomplishments of the current in-use testing technology. Such improvements are part of the technological challenge that this paper will later address. However, our starting point is in-use technology.

The current Part 572 test dummy approximates, in size and weight, the 50th percentile adult male. It has been well documented, however, that this dummy does not generally respond to impact the way a human does. For example, the chest is too stiff, the neck is too stiff, and the head and legs are not human-like in their response to impact forces. Figures 1 through 5 show the relationship of the Part 572 and Hybrid III dummies to desired responses based on human volunteer and cadaver test data. Nevertheless, for some specific impact conditions the Part 572 dummy head acceleration, chest acceleration and femur loads can generally provide a measure of the relative impact severity for similar restraints. For example, if the head impact severity measure for one belt restraint is significantly larger than it is for another belt restraint, and if these measures both occur from similar direct head contacts, then it might be reasonable to rank the system with the lower measure as being less likely to result in concussion injury to 50th percentile relaxed male occupants in crashes approximating that specific test configuration and severity. Similar remarks could be made for the measured chest accelerations and femur forces.

However, consider the caveats! It was assumed that the restraints were both belt restraints and that the head impact load distributions were similar. It would be highly questionable to assume that an inflatable restraint should be ranked with belt restraints simply on the basis of the comparative dummy accelerations or forces. The applications of the restraint forces, belts vs. bags, are entirely different. It was also assumed that when there was, for example, head contact, that the forces on the head were "similar." By this, one assumes that in both cases the loads are reasonably distributed so that we are indeed considering the risk of concussive injury, not localized or penetrating injuries. The engineer can judge the nature of the loading of the head by examining high speed film coverage of the event and the recorded data traces. It cannot be deduced by simply comparing the so-called Head Injury Criterion (HIC) numbers of FMVSS 208.

Thus, the engineer utilizing his engineering judgment and crash test expertise, can rank the relative performance of similar restraints by an examination of load measurements on the dummy, the data traces, and test films; however even those assessments are relevant only for occupants close to the size of the dummy and for accidents approximating the test conditions. Furthermore, it must be recognized that this is only true if differences in test results are sufficiently large as to preclude the possibility that the perceived differences are due to the inherent variabilities of the test procedures and car manufacturing. On the other hand, relatively small differences in dummy measurements may be insignificant or even misleading as a consequence of our lack of understanding of the subtleties of injury mechanics. One example, in the case of concussive type injury, is the influence of the unmeasured rotational accelerations of the dummy's head. The implied assumption of measuring just the translational accelerations of the center of gravity of the dummy heads is that angular accelerations are immaterial. This assumption is not generally valid because rotational accelerations may also cause concussive injury. (Reference SAE paper #700899 by A. E. Hirsh and A. K. Ommaya entitled, "Protection From Brain Injury: The Relative Significance of Translational and Rotational Motions of the Head After Impact").

It is important to note that this discussion concerns only the process of ranking relative performance and it does not address the problems associated with an assessment or rating of the probability of there being an injury of a given level (i.e., injury level expectation). Nevertheless, such relative ranking is informative to engineers in the development and relative assessment of a restraint system in a particular automobile.

It is necessary to define two words that will be used frequently in this discussion: rank and rate. According to Webster: to "rank" is, "to arrange in relative position," while to "rate" is, "to set an estimate on." When rank is used we have in mind A is better than B without stating the absolute value of either or the degree to which A is better. When speaking of rating, we have in mind setting a value on A or B such as safe, unsafe, acceptable, noninjurious, serious, severe, fatal, etc.

There are two major obstacles in attempting to rate the severity of injury based upon existing technology:

A. As discussed previously, the Part 572 test dummy does not have human-like impact response. Thus, the test dummy may measure loads and accelerations which are totally different from those experienced by a human of similar size and weight for a given accident simulation.

B. Very little is really known concerning the degree of injury versus HIC number. For the most part, the available injury tolerance data are not sufficient to allow one to rate injury level expectations such as serious, life threatening, or fatal. In addition, there are many possible occupant injury modes for which there are no injury tolerance data and/or no dummy measurements (e.g. concussion due to angular head accelerations). For a defined test condition, the engineer may be able to judge whether or not significant injury is unlikely by reference to the dummy measures, data traces, and the related film evaluations. For example, if the HIC is below 1,000 s, it is generally accepted that irreversible concussion from direct frontal head impact is unlikely. However, if the HIC is above 1,000 s, it does not follow that serious concussion or death would be likely unless the value is far in excess of 1,000 s.

Thus, while the engineer might be able to make judgments of actual injury risk, these risks cannot be objectively evaluated by simple reference to the so-called dummy injury measures, (HIC, chest accelerations and femur forces). Moreover, the engineer's ability to rank the relative performance of restraint systems by these dummy measures is dependent upon an individual, and informed, assessment that the numbers can be compared because the nature of the impact loading producing such numbers is indeed comparable. It is also appropriate to emphasize that these assessments or rankings relate only to conditions approximating those of the tests. How close they would come to providing a meaningful assessment of the protection afforded to a passenger involved in a real world accident is at best unknown and is the technological challenge that needs definition and solution.

RATING OR RANKING?

To begin to address the possibility of rating the actual, real world crash performance of vehicles for occupants of even one size and for accident conditions even closely approximating the test conditions, it would be necessary to have a dummy that more closely approximates a real human than the current in-use Part 572 dummy. Some of the anthropomorphic shortcomings of the Part 572 dummy mentioned earlier have been improved in the Hybrid III dummy developed by General Motors. However, while Hybrid III may behave more like a human in general kinematics, head impact response, fore and aft neck bending, and in chest impact response, it does not incorporate instrumentation to measure other body areas which are injured such as facial bones or the numerous internal organs. Moreover, the available injury assessment technology limits our ability to predict injury because we lack understanding of injury mechanisms (e.g. combined linear and angular head accelerations). Therefore, even if the Hybrid III dummy were used, we would still not be able to accurately assess the corresponding human response to the same crash environment. In addition, various size dummies would be needed to represent the exposed population.

Rating, or being able to assess specific injury level potential would require a series of dummies that were sufficiently human-like in their response as to afford a reliable measure of the critical forces and accelerations that humans would experience in real world collisons. Moreover the extent of our knowledge regarding the relationship of these forces and accelerations to the level of injury that would result would have to be increased dramatically. Definitive information on impact injury mechanisms and resultant human injuries of this scope, is not available. In addition, the composite of crash tests that would be required to represent the overall spectrum of real-world accidents would need to be developed.

Accordingly, let us examine what may be a more realistic challenge, that of attempting to rank the relative safety of different cars, in frontal accidents only. This examination may itself indicate the magnitude of the more formidable task of rating the actual safety of cars in frontal type collisons.

Three distinct technical considerations must be taken into account to assure that the public is being given information which is meaningful and useful in a comparison of crashworthiness or protection afforded to occupants of cars in frontal accidents.

Comparable Test Data - First, it is necessary that the information is indeed objectively comparable. For example, existing injury assessment techniques do not permit a valid comparison of a HIC number with no head contact to one with head contact. One solution to this problem would be application of the criterion only during the time interval of head contact (this is referred to by some as HIC III). Not only would this help make the numbers more comparable but it would give good grades to a belt system that prevented head impact. This by itself would not resolve all concerns, but it is indicative of the type of problems that must be resolved in order that we not compare dissimilar events.

Crash Test Spectrum - Second, it is necessary that the test results really do represent a sufficient segment of the spectrum of real world frontal crashes so as to provide a meaningful crashworthiness ranking to the consumer. For example, a valid and important question arises as to whether the test selection for frontals gives good grades to one car simply because an arbitrary selection of test speed, and dummy size caused the dummy trajectory to just miss the steering system, while another car received poor marks because trajectory pecularities caused the test dummy to hit the steering system. Would a slightly different test, or speed cause the rankings to reverse? The test matrix shown in Figure 6 illustrates a possible reversal of relative performance between two cars for a specific test condition (i.e. test speed and dummy size). An NHTSA contractor, MGA Research Corporation, addressed this concern in its report on the New Car Assessment Program (NCAP) 35 mph crash test results:

> "Because large differences in occupant injury criteria values may result from rather small differences in occupant kinematics, it is difficult to attribute differences observed in test results to fundamental differences in vehicle characteristics."

Until this concern can be resolved, it would not be possible to give the consumer reliable purchase information. Possibly, this could be addressed by conducting a wide variety of tests on each vehicle at different impact velocities and with different dummy sizes and positions, and by reporting the average dummy numbers. However, such testing may be economically impractical. An alternative approach may be to determine by means of a comprehensive research study whether or not cases of false or spurious rankings due to a particular dummy size, particular test speed, or particular test mode are sufficiently rare as to be unimportant in the overall scheme of ranking cars with restraint systems of a common type in frontal test conditions.

Test Rank vs. Field Rank - Third, and most important to a meaningful crashworthiness ranking, it is necessary to demonstrate that actual ranking of field injury levels or ranking of injury frequencies correlates to laboratory test rankings. General Motors has urged that the NHTSA conduct such a study by test ranking vehicles that are now on the highway, and determine whether or not the frequency of related injuries can be correlated with some ranking of these lab test measures (i.e., HIC to head injuries, etc.). The study was proposed in 1974 in response to an NHTSA proposal, at that time, for higher speed test requirements for FMVSS 208.

Such a validation of the ranking approach is necessary because the Part 572 dummy measurements of head, chest and femur loads may have an insufficient correlation to actual human injury potential. For example it may be that the measurement of the translational acceleration of the dummy head (HIC) may not comprehend a sufficient segment of concussive mechanisms (i.e. angular motions) as to yield a significant correlation to the real world. Similarly the measurement of chest accelerations may prove to be an inadequate measure of chest injury in the field. Such a final validation is also necessary to confirm that the selected test or tests adequately represent a variety of real world frontal collisions.

Field accident data of appropriate detail will be required to achieve adequate definitions of both test modes and correlation of the resultant test ranking with the field ranking. Such detailed data are of the kind which is now becoming available to NHTSA through its National Accident Sampling System. Although this data system is of appropriate detail in its accident and injury specifics, more data may be required for a correlation of the test laboratory results to the real world for ranking schemes being discussed at this symposium. However, this need is one that might be satisfied if funds were committed to more data collection and analysis in this existing accident investigation program.

POSSIBLE OUTCOMES

Currently, car manufacturers are not required to equip their vehicles with restraint systems that meet the dynamic performance requirements of FMVSS 208. Consequently, the differences in test performance (particularly 35 mph test performance) of current vehicles may be large enough to eventually allow meaningful comparisons; i.e., relative rankings. However, when all cars are required to be equipped with passive restraints that meet the injury criteria specification of FMVSS 208 at 30 mph, the differences in test performance between vehicles may diminish to such a level, even if tested at 35 mph, as to make meaningful comparisons virtually impossible.

This observation is illustrated as follows. The 35 mph test values for HIC shown in Figure 7 range from 668 s to 2904 s for both active and passive restraint equipped vehicles tested as part of the NHTSA New Car Assessment Program. However, the values for two models certified to meet the passive restraint requirements of FMVSS 208 range from 668 s to 1024 s. Now consider the values obtained in repeat tests of one of these two models at 30 mph. These values, ranging from 590 s to 840 s, exhibit nearly as much variation at 30 mph (250 s) as that seen between the two different models at 35 mph (356 s). Thus when all cars are required to meet the injury criteria specifications of FMVSS 208 at 30 mph, the variation in performance between vehicles may very well be overshadowed by test variability alone. Additional uncertainties relate to the real biomechanical meaning of actual test differences.

Some might suggest arbitrarily increasing the test speed to even higher levels to increase the likelihood of observable test differences. However, the recommended research programs would still have to be in place to ascertain whether or not real incremental field benefits might flow from an increase in the specified test speed.

On the other hand, NHTSA research and analysis of field data from the National Accident Sampling System, if expanded data coverage is instituted, may distinguish real and meaningful crashworthiness differences among automobiles. If a predictive rating scheme were to ultimately prove unsuccessful, impracticable, or overly burdensome, historical ratings for automobiles might still be possible. In either case, a research program to investigate the validity of such an historical rating scheme would be required.

Such ratings would not be available at the introduction of a new model design, but, could be available sometime later and continue for the model's life. As long as a model were essentially a "carryover design" from model year to model year, field historical data could continue to apply and ratings for that model could be supplied to subsequent prospective purchasers.

Some have expressed concern that the unavailability of a rating for a newly introduced car would compromise the benefit comprehended by Title II for the new car purchaser. That concern may be alleviated by considering that a manufacturer would be designing that new car with the knowledge that it would eventually receive a historical rating, and that such a rating would be publicized thereafter for its existing, carryover products. If the consumer responds to these ratings, motivation for achieving a good rating on a new product, then, exists whether a predictive or an historical scheme is devised and implemented. In addition, whatever course is chosen, the field data pursued for validation of a test ranking scheme or for use as a rating scheme will have significant value in understanding the real world safety needs that should be pursued for improving products and regulations.

SUMMARY

A formidable task of research and development will be required to obtain the technology necessary for predicting a car's crashworthiness characteristics through laboratory testing.

This examination of the technological challenges in developing a "predictive" crashworthiness rating provides the following conclusions:

1. Improved laboratory test tools, namely, dummies and other instrumentation, human injury data, and definition of necessary crash modes will need development before predictive ratings can be developed that will describe the actual safety of cars from a crashworthiness standpoint. Appropriate field data must also be obtained to allow correlation between laboratory tests and the real world.

2. The task of developing a field-correlated ranking can be addressed with existing technology, but is still formidable even if only frontal type accidents are considered.

3. Whether or not such extensive research and development is successful in producing a viable rating or ranking scheme, the resulting test and field data technology advancements should aid in making improvements in both vehicles and regulations.

4. The field data, which must be gathered for any rating or ranking scheme, may provide the basis for a more viable approach -- historical ratings.

Since a vehicle crashworthiness rating system must deal with only a portion of the driving equation, it is imperative that the ratings obtained be accurate.

Although this paper has concentrated on crashworthiness ratings, the same considerations must be addressed when developing ratings for damageability and the ease of diagnosis and repair of a vehicle. That is, when developing tests for ratings, the variabilities inherent in the test and test subject must be examined closely. Correlation of test data to the field is essential for any credible rating system. When developing field data, variabilities from non-vehicle factors must be isolated and the data normalized.

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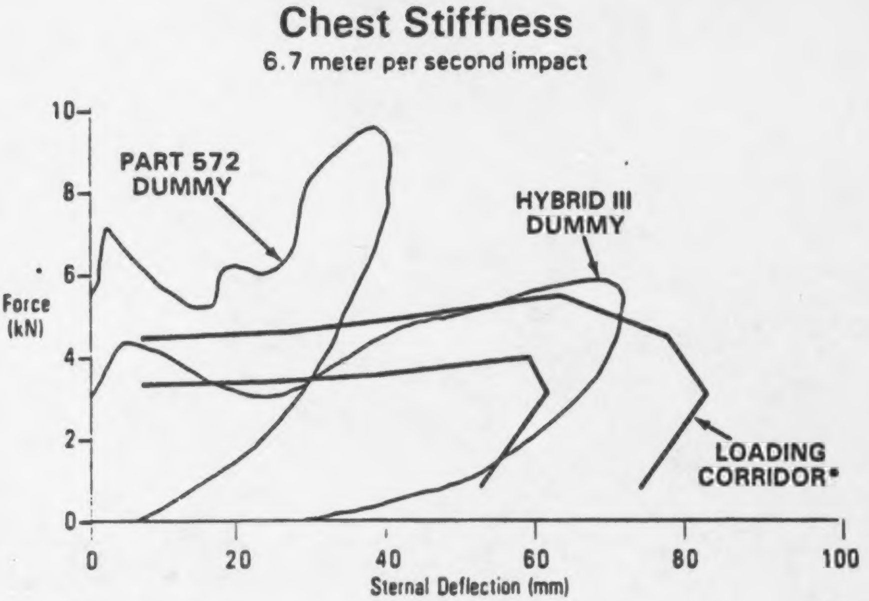
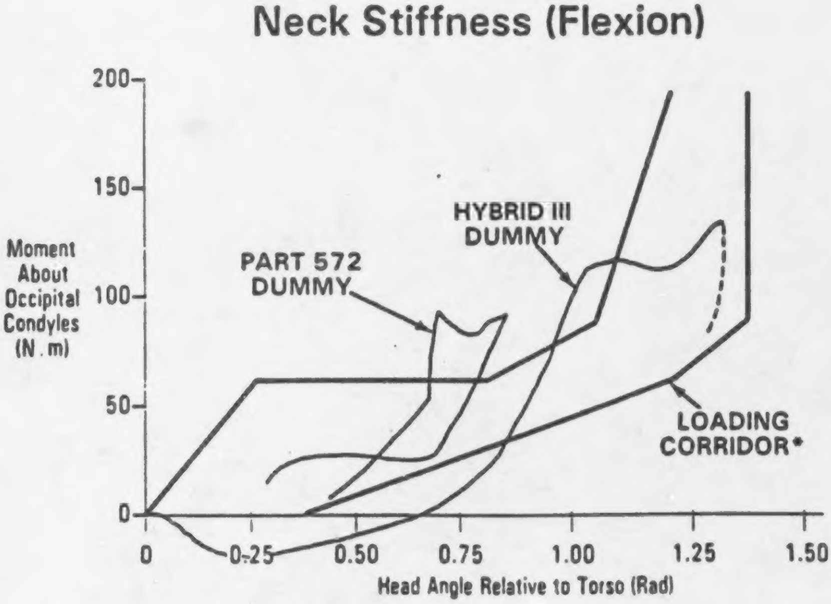


* Based on cadaver tests

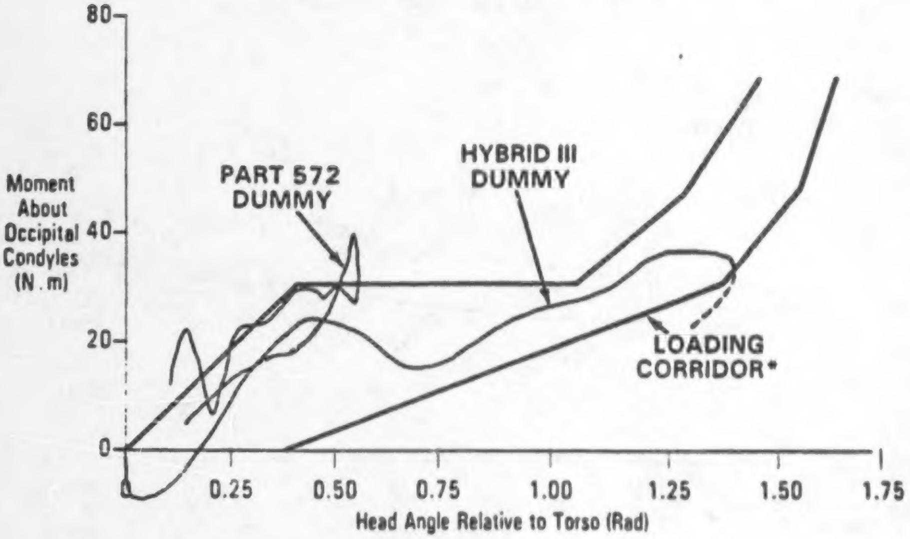
Figure 1



* Based on human volunteer and cadaver tests

Figure 2

Neck Stiffness (Extension)



Based on human volunteer and cadaver tests

Figure 3

Hard Surface Impact Response of Head

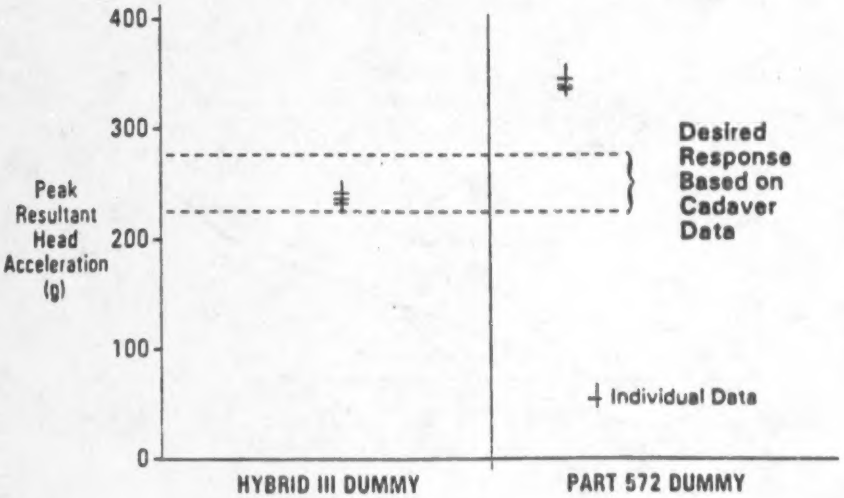


Figure 4

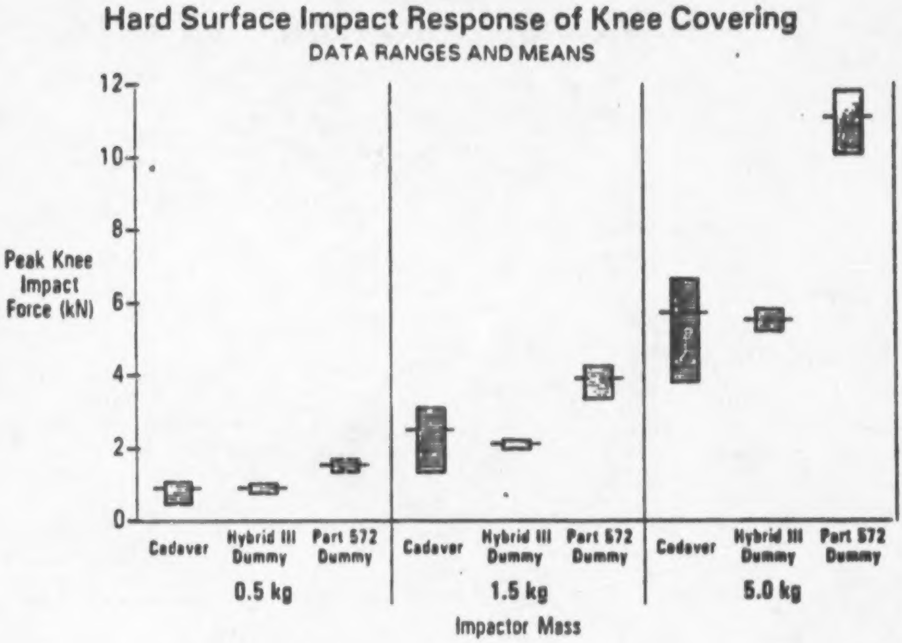


Figure 5

Hypothetical Car Performance in 90° Frontal Barrier Crash Tests

		TEST SPEED (mph)		
		25	30	35
DUMMY SIZE	5th Percentile Female	A/B	A/B	A/B
	50th Percentile Male	A/B	A/B	B/A
	95th Percentile Male	A/B	A/B	A/B

NOTE: A/B = car A better than car B
B/A = car B better than car A

Figure 6

Driver HIC Variation in Frontal Barrier Test

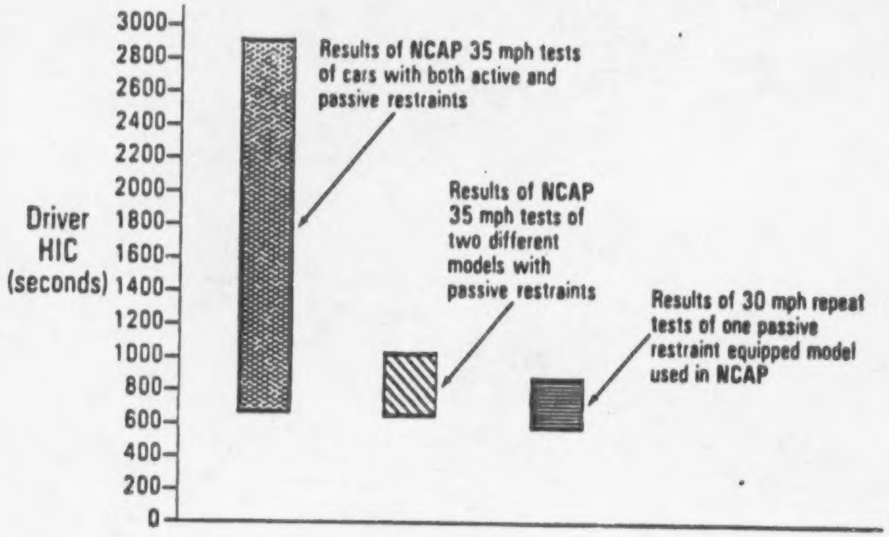


Figure 7

Attachment 2

Remarks by
Dr. Betsy Ancker-Johnson
Vice President
Environmental Activities Staff
General Motors Corporation

GM Safety Briefing
GM Proving Grounds
June 7, 1982

ADVANCING VEHICLE SAFETY THROUGH INDUSTRY/GOVERNMENT COOPERATION

At General Motors, we are convinced that progress in vehicle safety is best achieved if the process begins with basic scientific understanding such as you have seen presented today. This is in contrast to the opinion of those who believe regulation can call forth safety technology. In fact, most of the significant advances in automotive safety we enjoy today have resulted from understanding turned into products, and then into regulations.

A Bit of History

This morning, you heard Mr. Kehrl talk about some of GM's contributions during the early days of vehicle safety. I'd like to elaborate on that topic from the perspective of industry/government interaction. In those early days during the late fifties and early sixties, the safety community was just beginning to acquire detailed knowledge about what in a car could be improved to mitigate, or even avoid, accidents. Results from the early Automotive Crash Injury Research project at what is now the Calspan Corporation in Buffalo, New York revealed that among the leading causes of deaths and injuries were:

- Ejection of vehicle occupants - Forty five percent of injury-producing accidents involved a door opening; and ejection was the single largest source of fatalities.

- o Steering assembly impact - About half the serious and fatal injuries were in frontal crashes; and each crash had a driver behind a sterering assembly.
- o Windshield involvement - Injuries here were mostly lacerative and were more severe if the laminate was penetrated.

Safety research on these topics, some performed within the industry and some within university and other private laboratories, led to design changes that improved occupant protection. Seat belts were offered in 1963 and later made standard equipment. Door hinges and latches were strengthened to reduce occupant ejection. The energy-absorbing steering column was pioneered by General Motors to provide better protection for the driver in frontal crashes. We made the Energy-Absorbing steering column standard equipment on passenger cars in 1967. The windshield glass was re-designed by doubling the thickness of the plastic interlayer so that penetration of the occupant's head is less likely. This advance was adopted by the industry in 1966. The Side-Guard Beam was developed and introduced by General Motors beginning in 1969.

Those early safety improvements were prompted by field accident data and were the product of extensive research and development programs which stretched the safety technology state-of-the-art of those times. And, I might add, the windshield improvement and the energy-absorbing column were examples of "passive restraints" introduced on cars long before that term was in common use. Significant contributions to improved occupant safety were made, a fact that has been borne out by subsequent accident data results. Taking the steering system as an example, a January, 1981 report from the National Highway Traffic Safety Administration found that in frontal crashes, the risk of a driver fatality was reduced 12%, and the risk of serious injury to the driver was reduced 38% as the result of steering system improvements.

I want to take particular note that for each of the safety improvements I mentioned, the concept and most of the development work was accomplished before the emergence of the Federal Safety Standards. In fact, when standards were introduced, they were generally written to enforce the developments already in or scheduled for production. That process of having regulations follow the orderly development of accident countermeasures served the needs of safety well then and, I believe, could serve as well again today. Because, when regulations are written to try to evolve technology, problems very often arise which, in the final analysis, tend to delay the process rather than accelerate it. Take, for example, that portion of Safety Standard #121 which effectively had required wheel anti-lock controls for air brake systems on trucks and buses. The premature forcing of this technology proved so troublesome that part of the standard eventually was overturned by the courts.

Such experience indicates a more effective way to develop good regulations is to engineer and introduce product advances first, and then, as necessary, adopt safety standards to assure that an increased level of minimum performance is required of all vehicles. I said "as necessary" because a valid system of safety ratings might provide a competition-based alternative to the current regulation system.

Crashworthiness Ratings

GM favors the concept of safety rating systems if made instructive to the consumer. We have the greatest confidence that our products will compare favorably in a valid rating system, because of efforts such as you have seen here today. However, to be valid, any safety rating method must be based on sound engineering. We are working with NHTSA personnel as they strive to develop a satisfactory test for rating safety performance.

One of the key elements of a test protocol capable of producing useful rating numbers is the crash test dummy. At one of this morning's exhibits, you heard about GM's significant and longstanding developments in test dummy technology, culminating in our development of the biomechanically-based Hybrid III. Under current regulations, measurement of test data from dummies is not required, thus, the impetus for having only one "official" dummy is removed. We believe this to be an opportune time for NHTSA to move from the older, less sophisticated Hybrid II dummy and begin to use Hybrid III as they seek to develop a rating test. We already have shared our Hybrid III technology with the safety community, and commercially produced dummies are being validated for use in safety testing. We are anxious to cooperate further, however we can, to bring about the adoption of this better dummy.

Another example of our cooperative effort on safety rating relates to the inherent variability in crash testing and the resulting uncertainties in the numbers. There are many sources of variability in crash testing, especially when results are obtained from different test sites. Our long experience with crash testing tells us that the typical range of test variation today precludes any comparison of vehicles made on the basis of a single test. To understand the situation better, NHTSA has undertaken, and we have supported, a program of crash-testing 16 identical vehicles, some run at the same test site, and some run at different sites. General Motors is contributing four of the cars and the associated expense of testing them at our facilities you have seen today. We hope the results of this variability study will lead to higher quality crash test data for both the NHTSA and the rest of the safety testing community.

A New Spirit of Cooperation

The new climate of safety R&D cooperation between the regulator and the regulatees has been very encouraging. There are alternatives to the technology-forcing method of advancing safety and we are committed to working with the NHTSA to develop a better way. More and better accident data are available today to guide priorities in safety advances. For example, current accident data show side impact improvement and increased usage of seat belts are high on the list for making real progress in vehicle safety. Let me use side impact and belt usage as examples of areas in which General Motors is playing an important role in the new cooperative efforts between NHTSA and the industry.

Side Impact Research

The first example involves side impact crashes which, next to frontal collisions, are the most frequent type of fatal and serious injury events. As mentioned earlier, GM was a leader in the development of improved protection for side impacts in the middle sixties. More recently, we have been studying side impact accident data collected through our own Motors Insurance Corporation. These data have given us additional insight into the sources of serious and fatal injuries to occupants in side crashes; and we have made our findings public at various safety technical meetings, including international conferences. We find, for example, improved side interior energy absorption could provide safety gains.

In order to develop test procedures which will best promote and evaluate side impact improvements suggested by the field data, the Motor Vehicle Manufacturers Association and the NHTSA have been actively pursuing a multi-phase project to develop valid test procedures for evaluating vehicle side impact performance. General Motors has been a primary contributor to this effort. One government-industry task group is at work studying available sources of accident data (including our MIC data) to provide a common understanding of injury mechanisms and the associated involvement of vehicle components. Another group is studying candidate test methodologies to identify those tests which are expected to provide the best evaluation of side impact injury potential. A third task group is looking into the available biomechanics and human tolerance information to identify and propose which measurements from tests would be most meaningful. Further cooperative work is planned to take the output from these task groups and develop appropriate test procedures. We are hopeful that any future regulation that might flow from this joint study will provide a valid basis for advancing side impact safety.

Seat Belt Use Motivation

The second example of GM's cooperation with the NHTSA pertains to increased usage of seat belts. No single vehicle feature can improve safety on the highways more than the use of the belts now provided in today's cars. Last year, I sent a letter to NHTSA Administrator Ray Peck in which I said, "It is our belief that a comprehensive and sustained promotional program has the potential to bring about a significant increase in belt and child restaint usage by the public, and do so at a minimal cost to the consumer. We would not be enthusiastic about this program if we were not convinced that it can be effective."

GM has scheduled numerous activities in support of the national program with a key emphasis on education so that drivers and passengers will make a conscious effort to buckle up when they get into their vehicle. If people can be made to understand the violent forces involved in a crash and realize that wearing belts could prevent death and serious injury, there is a good liklihood they can be persuaded to use the life-saving devices already installed in their cars.

Among the campaign support activities GM has pledged are:

- We have adopted a Corporate-wide policy of expected belt usage in company-owned and licensed vehicles.
- We are supporting the proposal in the Michigan Legislature for a three-year trial of a mandatory belt use law.
- We are supporting child restraint use laws being adopted by more and more states.
- We are expanding our employee education campaigns emphasizing seat belt and child restraint usage.

- We sent a letter to our GM Officers and Directors who sit on Boards of other Corporations encouraging them to promote with in those companies the adoption of ongoing programs to educate or remind their employes about the importance of using seat belts.
- We are conducting a community education program on belt usage via the GM Field Speakers Bureau.
- We are running customer information advertisements in newspapers and magazines, such as the current one that uses the lead, "How to Save Your Life and the One Next to You." During the next few months, this ad will be appearing nationwide in over 150 newspapers and over 70 magazines.
- We have started a widespread radio campaign emphasizing the value of seat belts.

I want to take special note of a positive incentive belt-use campaign we are conducting at our Technical Center in Warren. This pilot study was fashioned, in part, after a research project at the Virginia Polytechnic Institute in which motivational aspects of belt usage were studied. Our positive incentive is the giving away of several fully equipped new cars. To be eligible for the prize drawing, our Tech Center employes had to sign a pledge to wear their seat belts . . . and, over 3/4 of them did so. By the way, early returns from surveys at our Tech Center gates show that belt use among Tech Center employes has increased markedly, from 38% to about 60%.

Increased belt usage clearly is an important ingredient in the national effort to reduce highway fatalities, and I am convinced that the national campaign to achieve such increase can be successful if we all do our part.

Conclusion

I hope the talks this morning, your tour of our safety development and test facilities, and my remarks this afternoon give you a new sense of GM's serious commitment to advance vehicle safety. We plan to do our part and will cooperate as best we can with NHTSA as they do their part. Standards based on developed technology were beneficial in the past and could be also in the future. As an alternative, the marketplace could be "technology-forcing" if valid safety performance ratings can be developed.

In the near term, however, the public also has a part to do. How about your help in elevating belt usage from a back-page comment to a headline concern? Together, the United States people, their government, and their car industry can make automobile travel even safer than we already enjoy as the safest in the industrialized world.

Attachment 3

GM

GENERAL MOTORS CORPORATION
General Motors Building, Detroit, Michigan 48202
556-2030 Area Code 313

NEWS

For Release IMMEDIATELY, FRIDAY, FEBRUARY 1, 1980

WASHINGTON -- General Motors today outlined a proposal to work with the National Highway Traffic Safety Administration in its efforts to develop the technology needed for a new safety rule on automobile side impact protection.

Speaking at an NHTSA public meeting on the proposed new safety standard, David E. Martin, GM's director of automotive safety engineering, proposed that industry and government coordinate efforts in the research and development phases of the rulemaking process.

"If the NHTSA will adopt a formal schedule that provides the opportunity for industry to coordinate its efforts with those simultaneous efforts of the NHTSA, GM hopes that the industry will respond with information that will enhance the NHTSA's ability to develop their proposed rulemaking and increase the opportunity for that rule to be of the greatest value to the consumer," Mr. Martin said.

Referring to the recognition GM has received for its pioneering work on the side guard beam which was first introduced on GM vehicles in 1969:

"We agree that the side guard beam has been beneficial and that additional safety features or improvements may be possible and should be evaluated," Mr. Martin said.

The safety community's understanding of how to make and measure other improvements is in its infancy. It is not yet clear what testing procedure is best suited to evaluate vehicle improvements, Mr. Martin said.

He urged the NHTSA to develop specific tools and test procedures and publish them for evaluation by the entire safety community.

"The industry will then be able to work with common measurements. We could begin to evaluate the test tools and procedures and provide data to the NHTSA regarding the practicability and objectivity of the proposed tests," Mr. Martin said.

The industry can make a further contribution to the NHTSA's efforts by evaluating existing vehicles with the test tools and procedures to be outlined, he said. This will provide baseline data from which potential improvements can be evaluated.

"We must evaluate, simultaneously, various injury modes such as interior impacts, structural intrusion and occupant ejection," Mr. Martin said.

The challenge is further compounded by the fact that there is very little space in the side of the vehicle in which to incorporate occupant crash protection features, he added.

The GM executive commended NHTSA for providing an open forum for the exchange of ideas and for pursuing research to identify the components of this challenge.

"We are committed to respond positively to Secretary Goldschmidt's call for 'a new era of public-private cooperation,'" Mr. Martin said.

"We believe the course that the NHTSA has taken to date is quite compatible with our proposed schedule for coordinated action."

* * *

Mr. **Glickman**. Thank you.

Mr. **Gore**. Thank you very much.

Let me pursue this business about the cooperative research program. You said that, in your view, it was just preposterous to talk about it being secret, as Ms. Claybrook did. Is there a public notice of the meetings of this group?

Mr. **Martin**. I am unable to say whether there is or not. I know of no formal notice in the public domain.

Mr. **Gore**. Is there any publishing of the conclusions reached or the activities or proceedings of the group?

Mr. **Martin**. I believe the findings of the studies are publicly available.

Mr. **Gore**. We have been unable to locate them. Are they published? We asked for all of the data, and all we got was a list of projects initiated back in March 1982, July 1982, and so forth. Most of them started very recently. Is there any published work product that has come out of this group that you are aware of? Have you ever seen one?

Mr. **Martin**. The work that we have conducted that has been supportive of this effort is in the public domain. We can provide that.

Mr. **Gore**. No. I am talking about the work of the cooperative program, the cooperative research program between NHTSA and the automotive industry. Has it published a——

Mr. **Martin**. I am unable to answer all your questions, Congressman, regarding what has gone into the public domain. As I indicated, I prepared myself to talk about small car safety, not this cooperative endeavor.

Mr. **Gore**. I understand. The questions come in response to your characterization of Ms. Claybrook's testimony. She may have overstated the secrecy angle, but if there are no public notices of the meetings and no way to find out what has been done, if there is no published work product and if there is no——

Mr. **Martin**. I am simply indicating that if it were a secret, we wouldn't be talking about it publicly.

Mr. **Gore**. I see.

The crash tests that you conduct, that data is not made public, is it?

Mr. **Martin**. No. That is private information on our program.

Mr. **Gore**. I see. And crash tests of experimental vehicles in the Government program typically are made public, or were?

Mr. **Martin**. Yes.

Mr. **Gore**. What about the product liability question? You heard the interchange earlier about Mr. Peck's comments regarding product liability. Am I misunderstanding that?

Mr. **Martin**. Perhaps you ought to rephrase the question, because I didn't catch all of it.

Mr. **Gore**. You didn't hear the interchange?

Mr. **Martin**. I heard some of it, but I didn't catch exactly what——

Mr. **Gore**. Let me clarify it if I can. Mr. Peck made a public statement which seemed to indicate a view on his part that product liability laws served to impede the faster introduction of safety improvements by your company. The theory was that if a dramatic new safety improvement was clearly demonstrated in a research safety vehicle and that data was made public and was clearly available, included in new cars, then, in subsequent lawsuits, under this product liability theory, your company might be exposed to judgments because you had failed to incorporate a clearly demonstrated safety improvement that might have saved the life of or prevented the injury of the plaintiff in that suit. This seemed to be the view that he was outlining. I wonder if you see it that way? Is that a misunderstanding?

Mr. MARTIN. I can't address what Mr. Peck's thoughts were. All I can tell you is that concern for product liability does not impede the introduction of safety into our products. Whenever we have a safety feature that we think is practicable to introduce in our vehicles, we introduce it.

Mr. GORE. I guess I should rephrase the question and say does it discourage the early demonstration of new safety improvements?

Mr. MARTIN. I have never seen any evidence that concern for product liability inhibited us in the development of research concepts or development of product improvements.

Mr. GORE. Why is your company hostile to the research safety vehicle program, for example?

Mr. MARTIN. I guess I misspoke if I gave you the impression that there was a hostility.

Mr. GORE. You said you wanted it stopped.

Mr. MARTIN. What I indicated to you, sir, was that we believe the expenditure of that money on field accident data, which can help us improve the product, is a better use of public funds.

Mr. GORE. If both could be done, would you support the research safety vehicle program?

Mr. MARTIN. If the research safety vehicle programs focused on what could really be accomplished on the highway rather than what can be accomplished in a laboratory, then I would have much more enthusiasm for it.

The fact that you can conduct a test does not necessarily mean that you have made an improvement in a product in the real highway circumstances.

Mr. GORE. What is the difference between research and development and product introduction? Isn't research and development into safety improvements an appropriate role for the Federal Government if we are losing 50,000 drivers a year?

Mr. MARTIN. If those demonstration programs truly demonstrated something that addresses the real world of highway safety rather than a laboratory test performance, then it is instructive.

Mr. GORE. The distinction is not quite clear to me. Let's take the example of crashing a research safety vehicle into another vehicle at varying speed, and then observing with slow-motion photography the effects of the accident on the components of the vehicle and the dummies that were wired in the vehicle. Why wouldn't that be appropriate?

Mr. MARTIN. Let me explain that in the development of an inflatable restraint system at General Motors, which we thought was something that would work in the real highway system, we conducted perhaps four tests that addressed real highway circumstances for every test that related to the Federal regulation. The

Federal Regulation 208 where you are only concerned with the barrier impact performance at 30 miles an hour—or perhaps in the case of the RSV, 50 miles an hour—does not assure you that you have a safe restraint system. You have to conduct many more tests than that. The typical tests that were conducted on the experimental safety vehicles did not tell us information that we had not learned in the experimental safety vehicle that we built in about 1970.

Mr. GORE. The better is the enemy of the good and the best is the enemy of the better. That is not to argue, though, that we should eliminate the program altogether. If you still need more data, then it seems like you ought to get the other data, not eliminate what little you do get from the RSV program.

You would have supported, then, taking the money from the RSV program and putting it into better accident data collection? That is your bottom-line position?

Mr. MARTIN. I would have preferred to see any experimental work that NHTSA conducted be more fundamental research, such as what injury criteria should we use for the out-of-position child with an inflatable restraint, for example.

Mr. GORE. Yes.

Mr. MARTIN. I would have preferred to see that money go into development of an infant test dummy that would give real indications of whether or not the air bag was coming out too fast to allow a child to get near it. I am talking about experimental programs that relate to real highway conditions, not just a barrier crash test. I would support any fundamental research along those lines, in the form of an experimental safety vehicle or in the form of any other laboratory experiments, that would expand the manufacturer's ability to make a safe product.

Mr. GORE. If you were in charge of the program instead of Mr. Peck, then you would have possibly reprogramed the money from the RSV program to be used on those activities?

Mr. MARTIN. I am just trying to illustrate examples of the difference between laboratory tests that are not instructive to the manufacturer, field accident data that is instructive to the manufacturer, and the type of research that could be instructive to the manufacturer.

I have not given this matter of what I would have done with their program were I the administrator any significant consideration. I am simply indicating the categories of research that are instructive to me as a member of an automobile company and that type of data that is not instructive to me. I don't pretend to have examined their whole research program.

Mr. GORE. I understand. We have, and it is not a choice for them between good or better research in the categories as you have outlined them. They just cut the money out for this RSV program and didn't reprogram it into accident data collection, or development of a child dummy. Instead, they have just eliminated the money.

Mr. GLICKMAN. I noticed last week's Washington Post had an article in which it said that your Chevrolet Celebrity recently scored the highest on crash tests that were released by NHTSA for the 1982 year. I assume that is a correct statement.

Mr. MARTIN. That is my understanding, yes.

Mr. GLICKMAN. What is it about that car that makes it do so well?

Mr. MARTIN. As I indicated, we conducted crash tests taking into consideration both the restrained and the unrestrained occupants. We develop our products for crashworthiness. We developed much of that technology. We developed the crash tests, we developed the dummy, and we use it. It is reflected in our product.

Mr. GLICKMAN. Was it just size or were there other elements? What I am trying to figure out is what technically is in that car that makes it so much better than any other cars, including many of your cars that General Motors manufactures?

Mr. MARTIN. The performance of the dummy in those crash tests reflects on the structure of the vehicle, the seat design, the belt restraints, steering systems, a whole host of things. It is really a system performance. You don't look at the crash performance of the vehicle in terms of a device, for example. It is really a system performance. And we do pay attention to these tests to improve the product.

We think that those tests are very instructive to the manufacturer. We have deep concern about taking just those isolated numbers and characterizing the overall safety of the vehicle with those simple dummy measures. Those dummy measures, taken in concert with engineering evaluation and engineering judgment of the crash test results, the films and other data, instruct the manufacturer how to improve the product. I think they are of very limited value in instructing the consumer what car he should purchase.

Mr. GLICKMAN. Wait a second. I understand NHTSA released the tests on 12 cars, and yours was the top one.

Mr. MARTIN. Yes.

Mr. GLICKMAN. They didn't, obviously, do them on every car, they did it on 12 cars. I don't know how they came up with those 12 cars. Do you know how they came up with the cars they ran the crash tests on?

Mr. MARTIN. No, sir, I do not.

Mr. GLICKMAN. You don't think that you could ever find a situation where tests like this wouldn't be a relevant factor to the consumer when he or she were buying a car?

Mr. MARTIN. I think you went to the other end of the spectrum. I think I indicated that those test data by themselves may not be instructive to the consumer. I am not ruling out any possible consumer information scheme. I just think that the use of those crash test data by themselves can be very misleading.

If I can expand on that, I would like to.

Mr. GLICKMAN. Sure.

Mr. MARTIN. A number of years ago when we were evaluating the repeatability and reproducibility of the Hybrid II crash test dummy, which has been adopted by the NHTSA in their standard—when we were evaluating our ability to repeat experiments, we conducted a number of sled tests, very simple sled tests, without a vehicle so that the dummy was only involved in the restraint system and the seat to evaluate the dummy repeatability. Somewhere in the midst of that program, we ran out of bucket seats that were cloth trimmed, so the judgment was made to use vinyl-trimmed seats. In just changing from the cloth trim to the vinyl seat, it changed the head injury criteria by 35 percent.

Now I would be very reluctant to tell the consumer that the car with the vinyl seats was 35 percent safer or less safe than the one with the cloth seats.

Mr. GLICKMAN. Do you think tests could be designed, crash tests, that would be relevant to the consumer?

Mr. MARTIN. I don't rule it out, but I think it is a very formidable challenge.

Mr. GORE [presiding]. Thank you.

What do you make of the recent introduction of air bags by Honda?

Mr. MARTIN. I know nothing about it. I understand that there was a vehicle on exhibit with an air bag, but I did not know if they manufactured one or if they are offering it for sale.

Mr. GORE. I think this is a potential source of effective competition as consumers look more and more for safety performance. I guess that has occurred to you in your role, I am sure. But do you think that is possible that this could be an effective competitive strategy to promote safety in performance?

Mr. MARTIN. Are you asking—why don't you rephrase it?

Mr. GORE. I am not asking any kind of a trick question or anything. It was very straightforward.

Is it possible that somebody like the Japanese could make breakthroughs on safety and thereby capture a greater part of the American market for cars by demonstrating clearly that they have come up with a much safer vehicle?

Mr. MARTIN. If they make a breakthrough and capture a segment of the market on a safety innovation, you bet we will go right after them.

Mr. GORE. Why doesn't GM make air bags available as an option?

Mr. MARTIN. We think they are economically impracticable. We did that in 1974, 1975, and 1976. We introduced them at a price of $225, which was far below our cost, at a time when the alternative was the very unpopular starter interlock. We, over a period of 3 years, even though we had production capacity for 300,000 units, only sold 10,000 units. So we are very reluctant to go into a program that would result in another $80 million loss.

Mr. GORE. I noted your comments on driver education in your statement. I am informed that the driver education program that was in existence has been eliminated and that the money which used to be in that program was cut in half and then dumped into a block grant to go to the States to be used or not, as they saw fit, or to be used on other things.

If I am correct in that interpretation—we will explore that further, but that is the information that I have—would you agree or disagree that that was not a wise move?

Mr. MARTIN. I am unfamiliar with what you are talking about, sir. That activity is not part of my office. I could look into that for you.

Mr. GORE. All right.

Let me say that the figures available to these two subcommittees also indicate that the Insurance Institute has found that your products, if I am not mistaken, turned out to be more crashworthy across the board than those of any other manufacturer; is that correct?

Mr. **Martin**. The Insurance Institute has given our cars a very good rating. I would like to emphasize that we believe the insurance data there reflect not only our cars, their size, weight, and design, but how and where they are driven.

Mr. **Gore**. I see.

I think that you and your company are due relative congratulations for that.

Mr. **Martin**. We like to share the credit with our customers.

Mr. **Gore**. Thank you. I am one of your customers, and I appreciate that.

Mr. **Martin**. Thank you, sir.

Mr. **Gore**. As is probably evident to you from these proceedings, many of us on these two subcommittees believe very deeply that the agency in charge of this effort should be doing an awful lot more than it is now doing in view of the tremendous tragedy that is occurring on an annual and daily basis around the country.

I want to thank you for your testimony here today.

Mr. **Martin**. Thank you.

Mr. **Gore**. Our next witness is Mr. Donald Friedman, president of MCR Technology, Inc.

Mr. Friedman, I would like to welcome you to the hearing today. Without objection, your entire statement will be included in the record in full.

I had the opportunity, along with Chairman Dan Glickman, to see and sit in and kick the tires of your research safety vehicle down in the Rayburn Horseshoe. It is a most-impressive automobile, and we appreciate your willingness to come here to tell us a little bit about it today. Welcome.

STATEMENT OF DONALD FRIEDMAN, PRESIDENT, MCR TECHNOLOGY, INC.

Mr. **Friedman**. Thank you, Mr. Chairman.

Since you are going to include the testimony, I would like to make some other remarks. In particular, I would like to comment on the experimental safety vehicle program whose purpose, as I understand it from the legislative mandate, is not intended specifically to be helpful to manufacturers.

The experimental safety vehicle program and its genesis in the law is to demonstrate the degree to which safety improvements can be made. I believe that, in the previous administration, that focus was carried to its limit with the research safety vehicle. Never was there an intent to provide the manufacturers with more than indication of the technology and the extent to which the technology could provide the American public with safety.

The current administration has a similar kind of effort which, as a result of budgetary considerations and perhaps because of the cooperative research program that Ms. Claybrook referred to, I think that current program is more focused in the direction that Dave Martin of General Motors just referred. That is, we are participating in a very small effort to design low-cost and modest improvements to the safety of production vehicles. That is, again, we are illustrating the kinds of changes or modifications that can be made at very low cost that will have effect on the driving public's casualties. We believe that such efforts should be emphasized. The basis for my testimony and, in particular, the suggestions of the particular improvements and the kind of research is included on the second page of my testimony.

I would like to make another point, and that is that the restraint issue or the incorporation of passive restraints or the providing and using of occupant restraints is the best and most cost effective means of satisfying the legislative mandate to save lives and reduce injuries.

As a technologist, I believe we have illustrated—not only in the research safety vehicle program, but in a variety of other contractual efforts for NHTSA—that there are a wide variety of design alternatives which are available to the manufacturers to incorporate.

I think the problem that we face as politicians and manufacturers and marketers and salesmen is that we have been singularly unsuccessful in getting occupants to use them if they are incorporated, or to incorporate them in the first place. I think that until the public via its government representatives or the administration resolves that issue, the only issue that we can, in addition, treat as technologists is the public status of unrestrained occupants. All of the testing that is done in terms of assessing vehicle performance is currently done with restrained occupants. That is, the dummies are in the cars with their belts on. As we have heard from a number of places, and there are very clear indications, a very small percentage of our population use the restraints that are available to them.

I am in favor of any program that gets them to use it more, whether it is being voluntary or whether it is being passive restraints. But very little has been done since I got into this business in 1968 when I left General Motors to handle the 85 percent or more of the public who are unrestrained. The remnants of the program that we have at NHTSA are focused on that, and I am pleased about that.

I wish, however, to make the point that it is a very relative effort to the previous efforts that we have made, and I think it can be a productive one, even within the framework of the administration's position with respect to what kinds of efforts are acceptable.

I would like to just go to the summary that I have. There are large areas of research which are largely unexplored because, for the past 14 years, the emphasis has been on developing and improving alternative techniques to implement FMVSS 208. While the debate must continue as to what to do and how to proceed with restraints, I urge you to encourage doing what we can at low cost for the majority of the people who won't use restraints.

Thank you.

[The prepared statement of Mr. Friedman follows:]

Friedman

Insert

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U.S. HOUSE OF REPRESENTATIVES

WASHINGTON D.C.

NOVEMBER 30th TESTIMONY of DONALD FRIEDMAN, President, MCR TECHNOLOGY, INC.

Chairmen Glickman and Gore and honorable members of the subcommittees: Since 1968 we have been working on the hypothesis that providing and using occupant restraints is the best and most cost effective means of satisfying the legislative mandate to save lives and reduce injury. As technologists we've certainly provided a wide variety of design alternatives but as politicians, manufacturers, marketeers and salesmen we've been singularly unsuccessful in getting occupants to use them. While my physician associates tell me that rising health care costs will create an economic imperative to prevent or reduce accident trauma, my most optimistic forecast is that less than 40% of front seat occupants will be restrained by the year two thousand, no matter what we do.

As a technologist I haven't been able to figure out a more helpful way to increase usage than my company's development of air bags that will protect front seat occupants in fifty mile per hour crashes whether they want to be protected or not. And when the society (whether represented by the bureaucrat, philosopher, economist, manufacturer or politician) chooses to ignore such systems, my problem-solving expertise suggests I look at the situation from another perspective.

I have concluded that if the majority of vehicle occupants for the next twenty years are going to be unrestrained, we'd better start developing ways to reduce injuries and fatalities without restraints.

As far as I can tell, the likelihood of discovering a means of reducing casualties without restraints in high-speed collisions, where most of the fatalities occur, is remote. The best that can be done is to mitigate the consequences of relatively low-speed accidents so as to produce less and lower levels of injury. To minimize fatalities, we must look for means of avoiding or averting the high speed collision, perhaps by optimizing driver/vehicle responsiveness.

It turns out, however, that a large part of the total cost of accident trauma is contributed by the very large numbers of non-life-threatening injuries in relatively low-speed collisions. And these are amenable to mitigation by very low cost countermeasures. However, as a result of reduced budgets and allocations of larger portions of available funds to government facilities, funding for investigations of modifications to protect unrestrained occupants in production vehicles has been virtually eliminated. For example, our efforts on these programs for NHTSA averaged three million dollars per year for the five years preceeding 1982, this year funding is less than $500,000.

MCR TECHNOLOGY, INC.
MINICARS, INC

Yet here are some of the things which can and need to be done to dramatically improve the survivability of unrestrained occupants:

- Understand why, how and to what degree unrestrained occupants are injured in auto accidents by analysis, simulation and test.
  - NHTSA is largely pursuing the analytical data
  - MCR is doing some simulation, crash and sled testing
  - We now need to assess the injury-producing potential of the interior of current production vehicles
- Correlate through bio-mechanics research the accident injury trauma with dummy injury measures for non-life-threatening injuries
  - Porcine animal research for abdominal/thorasic injury
  - Human surrogate research for head/neck injury
- Interior research to understand the injury mechanisms and develop techniques to reduce the level of injury such as:
  - soft steering wheel rim
  - collapsable steering column
  - controlled deformation instrument panel
  - improved interior impact padding
  - low laceration glazing and shielding
  - deployable glove box and tray
  - instrument panel contouring for trajectory control
- Structural research to work in conjunction with the occupant kinematics to minimize injury
  - lightweight energy-absorbing front and side structure
  - RSV type long stroke bumpers to limit low speed injuries
- Investigations into why drivers rarely invoke available vehicle performance to avoid impact. Research is needed to define "closed loop" driver/vehicle responsiveness when under the control of the
  - alcohol/drug impaired driver
  - old driver
  - youthful driver
  - driver who is unfamiliar with the vehicle
- Optimizations of the driver/vehicle responsiveness when under the control of these "non-typical" drivers in non-typical environmental circumstances by developing compensating devices and adjustable response controls such as
  - electronic, auditory, tactile and visual stimulation
  - proportional rate control steering
  - coordinated lateral displacement braking

These are areas of Research largely unexplored, since for the past 14 years the emphasis has been on developing and improving alternate techniques to implement FMVSS 208. While the debate must continue as to what to do and how to proceed with restraints, I urge you to encourage doing what we can at low cost, for the majority of people who won't use restraints.

* * * * * * * * * * * *

Mr. GORE. Thank you very much. I appreciate your statement and the work that you do as well.

It seems that the problem with the research safety vehicle program is essentially a technology transfer problem; would you agree with that?

Mr. FRIEDMAN. No. I believe that the auto manufacturers understand how to do all of the things that are illustrated in the research safety vehicle. They do not address why they don't do them, other than that they represent laboratory techniques. In other words, the passive restraints that are incorporated or the structural improvements that are incorporated can be incorporated to a variety of degrees, and are to some degree, in modern production vehicles.

The purpose of the program is to illustrate how far you can carry that.

Mr. GORE. What they could do if they wanted to.

Mr. FRIEDMAN. Right.

Mr. GORE. Help me understand something. Why, in your opinion, do they not want to incorporate some of the improvements that you have demonstrated are possible in your vehicle?

Mr. FRIEDMAN. Well, I think they have stated it quite well. They don't believe that it is marketable.

I believe that Mr. Peck was also correct, however, in the statement about product liability. I think that the question of having a production vehicle on the road with a significant breakthrough in safety technology could lead to product liability judgments that would be undesirable for the manufacturer who doesn't incorporate those. They are given reasonable time to incorporate them. That is, under the rules, as I understand it, as long as it is competitively available and the technology is reasonably available, then everyone has a short interval of time, perhaps 3 years, to incorporate such technology. If they don't, then they are liable for a product liability suit.

Mr. GORE. List for me the kinds of improvements that you are saying are possible now and are not being incorporated. Air bags would be No. 1, and what else? Just run through it shortly, if you would, the most important ones.

Mr. FRIEDMAN. The column and wheel assembly that you referred to a number of times has a need for major change and improvement. And it has been for any number of years. The RSV incorporates it. The manufacturers, I think, are starting to incorporate it.

Mr. GORE. One that is collapsible would be better; is that what you are saying?

Mr. FRIEDMAN. Collapsible under circumstances in which it is in the field.

Mr. GORE. I see.

Mr. FRIEDMAN. That doesn't mean it is just collapsible using air bag restraints. It needs to be collapsible under belt-restrained occupants as well as unrestrained occupants. The wheel needs to have some deformation capabilities that it does not now have.

Mr. GORE. What do you mean by that?

Mr. **Friedman**. In a number of particular types of accidents, you find that the occupant's or the driver's head will impact the wheel itself and cause severe facial distortion.

Mr. **Gore**. So air bags would be No. 1, and column and wheel assembly improvements would be No. 2. What would be next?

Mr. **Friedman**. Well, the most cost effective is passive restraints. The next are minor structural improvements, including deformations of—the ability to deform the dash with padding being between you and the dash so as to distribute the impact load.

Padding on the windshield header and A post and B post, those are the interior structures which would most likely be impacted in a collision with an unrestrained occupant.

Mr. **Gore**. Yes.

Mr. **Friedman**. The question of a trajectory control for an unrestrained occupant—when Dave mentioned about the difference in performance with a vinyl seat as compared to a cloth seat, there is no doubt that those kinds of variations exist and that there is potential for improving the situation, regardless of what kind of material you use.

Mr. **Gore**. Essentially, what you are saying is that if you look at the whole universe of the accidents that occur, the single most troubling category is head-on collisions, correct?

Mr. **Friedman**. That is the one that involves the most casualties.

Mr. **Gore**. That is the one that involves the most casualties.

Then if you look further into that category, what you are really focusing on doing is preventing and/or softening the interior collision between the passengers and the things that are right in front of the passenger.

Mr. **Friedman**. That is true.

Mr. **Gore**. All right. Do you agree that such improvements are not marketable?

Mr. **Friedman**. No. I believe they are very marketable.

Mr. **Gore**. Are the automakers just making incorrect judgments?

Mr. **Friedman**. It is a question of risk. That is, the market share is not likely to change significantly if you don't make those changes, and I think the marketing people just don't approve of taking that kind of risk with a new product.

Mr. **Gore**. That imputes a degree of cynicism that they would deny vehemently.

Mr. **Friedman**. Well, I would argue that they are improving the vehicle, they are just not advertising it and they are not making a market issue of it. I agree with Dave that the cars have been improved over the years. I also believe that all of the technologists are very anxious and capable of making such improvements. They are very cautious and conservative, evolutionary, and they don't want to go too fast because there is risk in going too fast.

Mr. **Gore**. Risk as defined in loss of market share?

Mr. **Friedman**. Loss in market share or profitability or whatever.

Mr. **Gore**. Or product liability?

Mr. **Friedman**. Yes.

Mr. **Gore**. Let me thank you again very much for being here. We appreciate it.

Mr. **Friedman**. Thank you, Mr. Chairman.

Mr. **Gore**. Thank you.

Our final witness—and let me invite him to the witness table for a colloquy on what we ought to do here—is Mr. Michael Finkelstein, Associate Administrator for Research and Development at NHTSA.

STATEMENT OF MICHAEL M. FINKELSTEIN, ASSOCIATE ADMINISTRATOR, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Mr. GORE. What is the status of Mr. Peck's hoped-for attendance here? Is it definitely off?

Mr. FINKELSTEIN. It is definitely off. We apologize if there is a misunderstanding or missed communications. We were under the impression that we had advised the committee from the first that it would not be possible—obviously that did not happen or was misunderstood—but that we would be available to meet at a mutually agreed upon date in the near future.

Hopefully we could discuss some of the issues that were raised then today and respond. We are available to do that today as well. I am pleased to be available.

Mr. GORE. Well, let me just say I don't think there was a misunderstanding, but others were involved in the discussions so let me give you and Mr. Peck the option of coming at another time. Our objective, after all, is to try to get this program improved and to avoid preventable or avoidable tragedies, so many of which are occurring in our country.

I think it might be helpful for you and Mr. Peck to come at a time when we can ask lengthy questions about the charges that have been raised by several of the witnesses here today. They are very, very serious charges, Mr. Finkelstein, and I think they deserve a full response from Mr. Peck and from you and others at the National Highway Traffic Safety Administration.

I understand that he cannot come tomorrow, either, is that correct?

Mr. FINKELSTEIN. That is correct.

Mr. GORE. What about next week?

Mr. FINKELSTEIN. I don't know. I will have to go back and look at what the schedule is. We can call the staff later today, when I return to the department, and schedule a hearing at your convenience.

Mr. GORE. Well, we would like to do that. I have discussed it with Chairman Glickman. We find this matter to be extremely important and we would like to have an opportunity to discuss it with Mr. Peck.

What I would like to do is, without objection, include your statement that you have presented to the subcommittee here today in the record and then give you an opportunity to change or modify or elaborate upon that statement at the time that you and Mr. Peck come to the second session of these proceedings, and then with Mr. Peck present and briefed on what has occurred here and the charges that have been made address questions to you and give you an opportunity to present the agency's position at that time.

Is that agreeable with you?

Mr. **Finkelstein**. I would like, if possible, to respond to some of the charges raised today.

Mr. **Gore**. All right, fine. I think that is appropriate.

Mr. **Finkelstein**. I think there were major policy issues that were raised with respect to Mr. Peck's position on regulatory matters. I think he can best defend himself on those issues, has done so in the past, and I am sure will be asked to do so in the future.

I think, though, that I would like to get on the record today—and I will provide as much documentation as this committee requires—on the coordinated research program that we have underway with the MVMA.

Nobody has ever accused Ms. Claybrook of understatement, and I think the charges that she leveled at that program are absolutely unfounded. I think that she mistakes or fails to try to distinguish research technical meetings to help our agency staff learn of the work that is underway in Detroit and have them learn of our work from rulemaking activities.

I think that the ANPRM that was withdrawn was issued in February 1979 in order to initiate a discussion of the work that should be carried out to enable the Government to decide whether or not a reasonable regulation for side impact protection could be issued.

Wishing will not make it so. The fact that one wants to eliminate carnage on the highways doesn't mean that you have the means at hand. She claimed in her testimony that we had terminated our work on full crash test programs and we were looking only at what the industry was interested.

Nothing could be further from the truth. Within the next 2 months we are about to initiate the largest side impact, full-scale crash test program that has ever been conducted in this country.

We are doing it. The industry is continuing work on components, on subsystem evaluation, which we want to be knowledgeable about and we expect to be knowledgeable about, so when our research has progressed further, we are in the best position to determine what, if anything, it is possible to achieve.

Mr. **Gore**. Mr. Finkelstein, let me interrupt you there. I will give you an opportunity to continue your statement. You have already raised a number of questions that we want to pursue. So we will begin our discussion today. I don't anticipate the hearing going on too much longer because we do want to have Mr. Peck here.

Mr. **Finkelstein**. Yes, sir.

Mr. **Gore**. We have a vote on the floor right now. Consequently, we will have a very, very short recess and come back in 10 minutes and we will let you continue at that time.

Mr. **Finkelstein**. Thank you so much.

[Recess]

Mr. **Gore**. The subcommittees will come back to order.

I would like to invite you to proceed, Mr. Finkelstein.

Mr. **Finkelstein**. Basically I think I have completed what I wanted to get on the record today, that in fact the research program is being honestly managed, that the industry does not have control, no say whatsoever in our research priorities, or they have no more say than any other citizen would have in making recommendations or making their views known.

Mr. GORE. Let me ask you a couple of questions and then get into more detail at our next hearing, perhaps next week. Let me ask you about the research safety vehicle that has been the subject of so much discussion during this hearing.

Two years ago your agency issued a report stating that the minicar RSV could be mass produced, that there was great demand for the car, and that such a car would cost about $6,800. Moreover, the car was being shown all around the country.

Now you state that the program is completed, that it was never the intention of NHTSA to use the RSV as an integrated system, or to encourage mass production of such a vehicle and the American public doesn't see the vehicle anymore.

My question is, what has changed so much since you have been at NHTSA?

Mr. FINKELSTEIN. Well, I have been at NHTSA since 1976, and I don't think we ever stated, or I certainly never stated and I don't believe that Ray Peck stated, that we never intended to continue the program or we never intended to see it in mass production.

Mr. GORE. Well, let me rephrase my question. What has changed over the past 2 years?

Mr. FINKELSTEIN. The program essentially was completed. Two years ago we were in the midst of completing our program to evaluate whether or not the RSV's that had been developed, two of them, whether those vehicles met the specifications that had been determined when they were designed back in 1974-75.

They did. They performed excellently, very good cars, and we are very proud of the program. But at that point the program was completed. We had, we believe, unlike GM, shown that you can make very major improvements in safety using available production techniques.

We believed that it would have been expensive. Expensive is a relative term. The estimate of the cost on the minicar RSV probably is on an order of 25 to 30 percent more than a comparable production car. The cost on the Calspan RSV were also developed, and they were slightly lower, but again, the cost of building a production vehicle in relevant dollars was somewhere in the order of 20 to 35 percent more than the cost of an available production car.

The question that we had when we completed the program was what does one do next. What we are doing now is concentrating on improvements in specific components. Clearly the concept integrating improvements into production vehicles is the thing that we are most interested in accomplishing.

Earlier, I don't recall if it was you or Mr. Glickman questioned whether or not what we had was a problem in transferring technology. The answer obviously has to be yes, there is a problem in transferring technology.

We have a statute that tells us to come up with regulations, to develop regulations in performance terms. When we built an experimental safety vehicle, we come up with a specific set of design criteria to meet certain performance objectives, and that is what we did.

The fact that many of the techniques used in building the RSV are used in designing cars today I would argue shows that the program was a success.

I think Mr. Walker earlier was talking about where did computer-aided design techniques come from. One of the places they came from was RSV development.

In the very early seventies the first work on the very early experimental safety vehicles resulted in many members of the industry, foreign manufacturers as well as domestic manufacturers, taking a much harder look at how you integrate restraint systems in structure in their performance in crashes.

I think that the concept of integrating safety into vehicles, the concept of considering the effect that these improvements have on overall performance levels is something that happened in part because of the RSV.

Certainly it is not the only thing that caused improvements in vehicle safety, but certainly I would argue—and I think we can show a number of examples and will be able to do it next week when reconvene—that there have been a great many cases where things have been implemented, even though nobody is building that specific model car.

Mr. GORE. Well, let me ask you a question about—I want to explore the RSV issue later on. You know, it is not just Ms. Claybrook who is making these charges. The Insurance Institute has labeled this agency's activities over the past 2 years as a disaster.

Does that trouble you?

Mr. FINKELSTEIN. It does trouble me, yes.

Mr. GORE. Well, why do you think they call what you are doing a disaster? Are they biased?

Mr. FINKELSTEIN. Well, they certainly disagree with some of the conclusions that we came out with. They certainly disagree with certain of the rulemaking decisions that have been reached by the new administration.

Mr. GORE. It is a pretty credible institute, is it not?

Mr. FINKELSTEIN. Their technical work is very good quality. We certainly had no problem with them on a technical level. We continue to work with them.

Mr. GORE. Well, why do you think they would describe the performance of the agency over the past 2 years as a disaster?

Mr. FINKELSTEIN. I believe because they disagree with a couple of major decisions that have been made and they are looking for evidence or they are looking for events as characterize as evidence in many other areas to show that what is happening is that there has been a disaster at the agency.

I think there is very little that we would disagree with with Dr. Haddon's presentation on small car safety, for example. Nobody at the agency believes that small car safety is not a problem. Nobody at the agency I think—I have to admit that the agency did overreact in commenting on the initial report from GAO.

I think in part the overreaction stemmed not from disagreeing with some of their factual findings but from their contention that we were not doing the kind of analysis that they were saying should be done. In fact, we have been investing upward of $10 million a year for about the last 3 to 4 years on a data collection system that finally enables us to get the best information that we can on small car safety performance.

Mr. GORE. What was your recommendation to Mr. Peck on the 208 standard, as a long-term expert in the field?

Mr. FINKELSTEIN. I recommended that the standard not be rescinded. I did an analysis for the Administrator, as did other people in the agency. My analysis concluded that there was a very, very, very great reduction in the benefits that could be expected from the regulation.

The regulation when first issued in 1977 anticipated overwhelming numbers of air bags. By the time we examined the regulation again in 1981, there were only two maufacturers that we were certain that would be introducing air bags.

Mr. GORE. Well, you recommended in favor of the standard and the Administrator——

Mr. FINKELSTEIN. Disagreed.

Mr. GORE [continuing]. Did not take your advice.

Illustrates some of the problems of you speaking for him in this proceeding. You have been there since 1977, you say?

Mr. FINKELSTEIN. 1976.

Mr. GORE. Since 1976. There is a difference, I understand.

Mr. FINKELSTEIN. There is.

Mr. GORE. Why would the General Accounting Office make the strong statement that it has about the last 2 years?

Mr. FINKELSTEIN. I am not sure their statement is a statement about the last 2 years. I think their statement is a statement about——

Mr. GORE. The present state of affairs in NHTSA.

Mr. FINKELSTEIN. The present state of affairs in NHTSA.

Mr. GORE. Fair enough.

Mr. FINKELSTEIN. It was limited to our views on the small car problem and I frankly think we invited them, but through some misunderstanding of their recommendations, as well as an overreaction to their recommendations.

Mr. GORE. Well, that is a candid response about your overreaction, but what about the substance of their charge, No. 1; that your basic source of accident data is inadequate and that you have an inability to separate data on small cars, small car accidents, from other accidents?

Mr. FINKELSTEIN. I think at the time they issued the report, our basic source of data was inadequate.

Mr. GORE. Then it is your statement that it is now adequate?

Mr. FINKELSTEIN. It is now getting adequate. We began a problem in 1975 or 1976 to design nationally an accident sampling system that looked at both fatalities and injuries.

The first year we collected data on accidents was 1979. We collected data on 3,000 accidents; 1980, we collected data on another 3,000 accidents.

They did their report at the time when we had that data in hand. By the end of 1981, the total file was up to 12,000 cases. In 1982, we are going to have upward of an additional 10,000 accidents investigated.

When one looks at specific cases in that file, though, and tries to get a suitable number of events in any given matrix, whether it is size of car, direction of crash, severity of crash, it sounds like we have an enormous body of data.

In some cases, it is adequate. In other cases, it is not adequate for making dispositive statements of what the data show.

Mr. GORE. Would you agree with what our last witness said, that, A, the major accident category involves head-on collisions, that that is the one that produces the most injuries and ought to receive the most attention?

Mr. FINKELSTEIN. Yes.

Mr. GORE. Agreed on that.

Mr. FINKELSTEIN. Agreed.

Mr. GORE. Would you agree further that the most obvious area for attention is on all those things which can prevent and/or soften the interior collision between the driver and passenger and the steering wheel and the dash?

Mr. FINKELSTEIN. Absolutely. We would agree that the steering column is the principal issue. There has been investigation——

Mr. GORE. You are skipping over one. There was, he said that was the second principal issue. The first one was passive restraint.

Mr. FINKELSTEIN. Well, obviously, I am a believer in air bags. The Administrator is a believer in air bags. The question that——

Mr. GORE. I know that you are a believer in air bags and in passive restraints, and you recommended that NHTSA keep the standard to get some passive restraint.

Mr. FINKELSTEIN. There is a difference.

Mr. GORE. It is not clear whether the Administrator is or not.

Mr. FINKELSTEIN. Well, he will have to defend, you know, his position, certainly, but there is a difference, a very real distinction, between air bags and passive restraints.

I know for a fact that the Administrator believes that air bags should be offered as an option. I know for a fact that the regulation that we had enforced as of 1981 would not have delivered very many air bags to the American consumer; they would have delivered detachable, automatic seat belts.

The question that was examined in great depth the first time in the course of that ruling and proceeding was whether detachable, automatic seat belts would result in increased belt usage in any substantial amount.

Everybody agreed that the usage increase, if any, would be far less than had been expected.

Mr. GORE. Well, let me accept your distinction for the moment and focus on air bags. What are you doing if you are such a believer in them?

Mr. FINKELSTEIN. We have got two programs that are in the process of—well, we have currently out on the street, requests for proposals from manufacturers to develop air bag retrofit kits.

It is our intention to see if we can come up with air bags that can be put in at least the driver's side, the side where 75 percent of the occupant fatalities occur per vehicle.

Mr. GORE. For cars that have already been purchased.

Mr. FINKELSTEIN. For those that have already been purchased.

Mr. GORE. What about cars that are yet to be manufactured?

Mr. FINKELSTEIN. We are in the process, and hopefully we can get it completed quickly, we are in the process of working with GSA currently to develop a joint agreement where the Government would be purchasing cars equipped with driver air bags.

The purpose of both programs is to show that, given the developments that have occurred over the last 7 or 8 years, show that it is possible, at reasonably low cost, to put air bags into present cars, at least on the driver's side, and hopefully show it convincingly enough that it will help reestablish or establish a market that was not there when GM introduced air bags——

Mr. **Gore**. You think they are ready to go now? Air bags?

Mr. **Finkelstein**. I think that air bags are ready to go——

Mr. **Gore**. Why are they not in use?

Mr. **Finkelstein**. GM was the major manufacturer that tried to sell them. GM did not succeed in selling air bags. There have been accusations that it was a management decision on GM's part to kill the program.

They spent an awful lot of money, though, to fail. They probably had invested upward of $100 million and even a company of GM's size, that is a lot of money.

They introduced air bags, unfortunately, on their top-of-the-line, full-sized cars in 1974 model year and they missed the introduction. You may recall——

Mr. **Gore**. So that market, that was a funny market year, so that market data may not be very reliable.

Mr. **Finkelstein**. That is our hope.

And one of the other projects that we have got now is that we are attempting to do a study of why the GM air bag marketing attempt failed. We got some independent market analysts under contract who are going to be doing that study for us.

Again, to see what we can learn now and whether or not we can come up with convincing evidence that the technology is both ready and that the market exists so that it would be possible to convince one or more companies to enter into a program to voluntarily introduce air bags to the market.

Mr. **Gore**. Let me ask you this, your opinion, as a long-time expert in this field, if air bags were generally installed on all new cars, you got the economies of scale that came from a large production of air bags, would the money saved from insurance claims and insurance rates and not only property damage but personal injuries, death claims avoided, would that amount of money more than offset the cost of the air bags installed?

Mr. **Finkelstein**. Probably not. But if one did a full-fledged societal cost/benefit analysis, taking into account lost income streams and contributions to GNP and things like that, full air bag systems, that are under $700 or $800, would probably be cost effective, whether in mid-1980's dollars, one could bring in full front systems at that cost, I would like to think we could.

Mr. **Gore**. Well, with the kind of analysis that you propose, then, it would be cost effective, how many lives would be saved, would you estimate?

Mr. **Finkelstein**. Our best estimates were that air bags in all cars in the fleet would save probably around the order of 8,000 to 10,000 lives a year.

Mr. **Gore**. 8,000 to 10,000 lives a year.

Thank you.

Mr. **Walker**. Thank you, Mr. Chairman.

When I am driving my car, am I safer with my seat belt on and my harness fastened than if I were driving a car that had an air bag in it?

Mr. **Finkelstein**. Our best estimates are that it is about equivalent, that in some crashes, you are probably better off with an air bag, and other crashes, you are unquestionably better off with a seat belt system.

Mr. **Walker**. Provided, of course, I am wearing a seat belt with the air bag.

Mr. **Finkelstein**. Right. Provided you are wearing a seat belt, a lapbelt with an air bag, then the air bag is the equivalent of a full three-point harness system.

If you do not wear your air bag at all, you clearly lose some of the effectiveness of the air-cushion system.

An air-cushion system, absent the lapbelt, in our best estimates, would probably be about 80 percent as effective as a full three-point belt system.

Mr. **Walker**. Yes, but what you are telling me is that an air bag alone without the lapbelt, you are confident that an air bag alone without lapbelt now, is better than being strapped in a car with a harness and a lapbelt?

Mr. **Finkelstein**. That is right, I would say that.

Mr. **Walker**. OK. That is what I understood you to say.

Mr. **Finkelstein**. I meant to say that a three-point belt system is better than an air bag without a lapbelt, not by any enormous amount, but it is better.

Mr. **Walker**. OK. So in other words, to make the air bag effective and to get the kind of advantages that many people see out of them, you basically have to get people to buckle up anyhow, is that not right?

Mr. **Finkelstein**. To get the full effectiveness that is potentially available with air bags, yes, you have to get people——

Mr. **Walker**. And so we are right back to whether or not what we have got is a need to convince people that one of the things that they have got to do is strap on the harness when they get into the car. Is that not correct?

Mr. **Finkelstein**. I don't think that is a question, I think that is a certainty, whether or not you had air bags—if you had an air bag regulation, if the manufacturers decided they would only build cars with air bags starting the day after tomorrow, it would be more than 10 years before you had air bags throughout the entire fleet.

During that period, people would still be getting killed from failure to buckle up their three-point belt system. If you had cars equipped with air bags, you still would want a belt-use campaign to convince people to use lapbelts.

There is no question about that.

Mr. **Walker**. And what alternatives are being looked at beyond public relations campaigns and a number of things like this to move us toward more people fastening their safety belts?

You know, when I—I follow automobile racing to some extent. I have not seen any of the major drivers asking for air bag systems be put in their cars. They do like to have a good, strong harness system in the car, and they do like to have it fastened down pretty well, and they are the guys who are really at risk at high speeds, it seems to me that they are probably telling us something, based on the research that they do.

What we really need is to convince the driving public that some of that research that has been conducted now for the last 30 or 40 years has some validity to everyday driving.

What I would like to know is what we are doing to make certain that word gets out to the American people. Is, for instance, the insurance industry willing to cooperate to say that they will not pay claims on people who do not use a seat belt?

Mr. **Finkelstein**. I think they would like to say that, I don't believe—I think you had better ask them that question. I think that what we are doing is we are trying to get as many sectors of our society to push seat belt use in as many arenas as possible, at church, at the workplace, using conventional public education techniques, and our hope is that a concentrated effort will succeed where previous efforts, in this country at least, have failed.

Mr. **Walker**. Well, I guess my question is why we keep coming back to these technological solutions.

It is kind of a false sense of security when you tell people that we are going to protect you in head-on collisions, but we can't protect you from side impacts, and we know that having a seat belt on will protect you from both kinds. We know that we are creating the kind of false security based upon technology when, in fact, we know what the known solutions are. Why aren't we paying more attention to moving toward some of those known solutions, the very kind of thing that protects people in automotive racing and a number of areas where we have crashes that take place on a fairly regular basis?

Mr. **Finkelstein**. I think the answer is we are trying as best we can to promote seat belt usage. I think, though, the answer as to why many people favor air bags is because they work, that they are certainly a great deal more effective than not using a seat belt and that, in fact, we have not yet succeeded in seeing upward of 10 percent of this population using seat belts. So the answer is that there are legitimate avenues and legitimate courses of action——

Mr. **Walker**. There are countries that have achieved a great deal larger seat belt use that we have.

Mr. **Finkelstein**. Mandatory seat belt laws. I think the Australians are probably the best example. Most of Europe has seat belt laws in effect that are enforced to a lesser or greater degree. Depending on whether or not they are enforced, you see usage figures rise. About half the Canadian provinces now have seat belt usage laws, and you can see the reduction in fatalities just in those specific provinces.

Mr. **Walker**. I would like to go back to a question I asked earlier today. Since we are looking at small cars here and that is supposedly the focus of the hearing, do we have the figures that I was looking for of how European fatalities compare to fatalities in this country over a period of time?

Mr. **Finkelstein**. Yes, we do. The answer is that the fatality record in the United States—the safety record in the United States—is a superior one, the performance of the overall vehicle transportation system. You would obviously have to include the highway system as well as the kind of car that is driven, as well as the drivers, as well as the population densities and vehicle densities. They have resulted in a lower fatality rate in the United States than virtually anyplace else in the world.

In recent years, I know the Japanese made major improvements. There are enough differences in the way they collect data and the way the Europeans collect data and the way we collect data that, if anybody wanted to do precise analyses, you would spend the rest of your career arguing about it. But in aggregate and gross numbers, our system is the best in the world.

Mr. **WALKER**. OK. So you are telling me that in terms of numbers of accidents and in terms of numbers of fatalities, the European record is worse than the record in the United States.

Mr. **FINKELSTEIN**. Yes. However, having said that, we are still seeing upward of 45,000 people a year dying on highways in this country. I think the way we at NHTSA have historically viewed that issue is not are we better than anybody else, but is there anything that we can do to meaningfully reduce that number.

Mr. **WALKER**. Understandably. That is the focus here, too.

But I am trying to find some avenues here that we can explore to find out whether or not this subcommittee is on the right track and whether or not we ought to be devoting the attention to the technology of the small car.

Mr. **GORE**. Would the gentleman yield?

Mr. **WALKER**. I yield.

Mr. **GORE**. Do you think the worse European record is in large part due to the high percentage of small cars that have been in use there?

Mr. **FINKELSTEIN**. I would say that is probably some of it. I would say their road system probably contributes easily as much.

I think the question that we are looking at at the agency is when one looks at a small car problem—we put out a report 2 years ago or a year and a half ago that estimated fatalities increasing to 70,000 possibly by 1990, and we attributed about 10,000 of that increase to small cars. I think if we were redoing that report today, we would have a lower number.

Having said that, if the average car on the road becomes smaller and smaller, the whole safety problem turns into a small car problem. If we come up with any mitigation concepts, they have to be concepts that can be applied to smaller cars.

Mr. **GORE**. I thank my colleague for yielding.

Mr. **WALKER**. I thank you.

Specifically, I think that's what we need to address here, is whether or not the technology of the smaller car is, in fact, the problem in the European experience, which you pointed out is worse than our own—which comes then to the other question I was asking.

Is a good driver, an expert driver, safer in a small car or a large car? I guess, from what you are telling me, it is that he is safer in a large car.

Mr. **FINKELSTEIN**. I would say he is safer. But I say, realistically, an expert driver who wears seat belts is probably going to survive all of those situations.

Mr. **WALKER**. But, you see, that comes down to another question as to what we are pursuing in this country. My point earlier was that we don't do a very good job of driver training in this country, when the analogies that have been used earlier here today as to what happens in the air system, we would never think of putting somebody into the pilot seat and into the air system of this country with the kind of training that we give to drivers. You know, there is absolutely no comparison to the kind of skills that we require of someone to handle airplane controls, as to what we require of people to handle driving controls. In all honesty, and in all honesty, there is some sophistication in airplane controls, but the number of decisions that have to be made by the individual with regard to maneuvering that technology is far greater in the automobile than it is in the airplane.

I highly question whether or not we are making adequate efforts to train drivers. All you have to do is look around on the highways and on the streets to know that we are not making adequate efforts in that regard.

Mr. **Finkelstein**. Except, though, that even in most people who drive, most average drivers who make a great deal of mistakes, there is enough forgiveness in the system that they still don't have an accident every time they make a mistake. One makes a great many decisions. There are estimates that a person makes as many as 10 million decisions between accidents, which means that 9,999,999 times, whether or not you made the right decision, you at least did not suffer the consequences of making the wrong decision.

When you have so much evidence that driving is not a risky event, because every time you get in your car you end up getting home safely, it is probably—I think it is hard to improve the quality of drivers. Hopefully, when you are dealing with a single event, like buckling your seat belt before you start, there is a greater likelihood of success.

Mr. **Walker**. You have just written off the whole driver education program that has been instituted in this country for some years. I mean, the whole idea behind driver education was that you could improve drivers' skills.

Mr. **Finkelstein**. The whole idea was that you needed some minimal skills before you should be allowed on the system. I don't think any——

Mr. **Walker**. Yeah, and that is exactly what we have had in this country, is minimal skills. We are putting people out with very minimal skills.

Mr. **Finkelstein**. Well, it has certainly been a controversy for a number of years as to the effectiveness of driver education programs.

One of the major projects that we have underway, that I think is in its final stages, is a system to examine, to compare three different driver education programs, and do 5 years' worth of follow-on tracking of people who have been exposed to what is the best driver ed system that we could develop, a conventional driver ed system and no driver ed system.

Mr. **Walker**. When you say the best driver education system, are you talking about a system where right now you can pay several hundred dollars and go to a track and experience skids and do all of that kind of thing to begin to understand how a car works so that, in fact, you do become a good driver? Is that the kind of system you are talking about?

Mr. **Finkelstein**. It was not a complete defensive driving program, no. It was using the best material that has been available in conventional driver education programs that could be within the size of budgets.

Mr. **Walker**. But in fact, you would have to admit that people who come out of that kind of school, the kind I just described, come out as fairly skilled people in handling an automobile; isn't that correct?

Mr. **Finkelstein**. They do when they are paying attention and they get their test right after they have completed the course. I think if I had a professional driver working for me, I would certainly like him to be exposed to that course, and I would cross my fingers that he didn't drink too much when he got behind the wheel.

Mr. **Walker**. Understandably. You can put a lot of circumstances.

What I am saying is that you can significantly improve driver skills. Driver skills are not something that are completely unteachable. You can significantly improve them.

What I am coming to is, given a person who has good driver skills, isn't it also logical to assume that if given a car that is more maneuverable and more responsive to those skills that they are more likely to be safer in an accident situation than they are in a car that is less responsive and less maneuverable?

Mr. **Finkelstein**. That sounds logical. But one of the things I know that I have been exposed to is that I have been put in cars that handled exceptionally well and put in cars that handle exceptionally poorly. I have seen professional drivers get in and push those cars to their limits. It is pretty hard to push a car to its limits, where the performance of that car really has an effect, a major effect. Most cars handle and perform well enough today that even the best drivers cannot push it to its limits.

One of the questions that we at the agency would like to know, and I think a lot of the safety people around the world would like to know, is whether poor drivers perform differently in cars that perform well versus cars that perform poorly. I think there are questions like that that we cannot answer and that we do not yet have answers to and that, hopefully, we will learn about.

Mr. **Walker**. Thank you, Mr. Chairman.

Mr. **Gore**. A couple of very brief questions, and then we will conclude.

On the matter of driver training, am I correct in my statements that the administration eliminated that program, cut the money in half, and then dumped the remainder into a block grant without any requirement that it be used for that purpose by the States?

Mr. **Finkelstein**. The highway safety grant and aid program, the State and community highway safety program, was reduced by about 50 percent 2 years ago. There were 18 specific activities, 18 specific highway safety programs standards that were in effect that a State had to spend money on and had to show that they had an effective program in each of those areas.

We had been proposing to the Congress starting in about——

Mr. GORE. Were they eliminated?

Mr. FINKELSTEIN. They were not eliminated.

Mr. GORE. They were made advisory?

Mr. FINKELSTEIN. They were made advisory.

Mr. GORE. So the requirement was eliminated?

Mr. FINKELSTEIN. The requirement that one must have an adequate program in every one of 18 areas.

Mr. GORE. Was the requirement that the money be spent for driver education also eliminated?

Mr. FINKELSTEIN. It is no longer mandated.

Mr. GORE. You could have answered the question just by saying yes. I mean, they eliminated the requirements; they cut the money in half; dumped the remainder into a block grant, this big smorgasbord; gave it to the States and said they didn't have to spend it for what they used to spend it for.

Mr. FINKELSTEIN. What we said was that you had to spend it for a more limited number of areas that we believed had a much higher payoff.

Mr. GORE. But you didn't have to——

Mr. FINKELSTEIN. You did not have to spend it on each of the 18 areas.

Mr. GORE. You didn't have to spend it on driver education.

Mr. FINKELSTEIN. No. But you did have to spend it on alcohol enforcement, you did have to spend it on drug use programs, you did have to spend it on State data systems.

Mr. GORE. And the money was cut in half.

Mr. FINKELSTEIN. That is true.

Mr. WALKER. Would the gentleman yield?

Mr. GORE. Yes.

Mr. WALKER. But the fact is that you could spend all of the money for driver education if you wanted to; is that right?

Mr. FINKELSTEIN. If you could make the case—if you had to go through a system of planning and analysis that we had been promoting since the mid-1970's to permit the States, to permit the State highway safety officials to identify where they had their most pressing needs. The way the program is now administered is that they have to spend their money on the major national priority areas that had been identified. However, they were allowed to divert money from those areas if they could come up with documentation that, in their specific State, the most pressing need was in motorcycle helmet use campaigns or in——

Mr. WALKER. In other words, it allows them to determine their own priorities and then devote more funds for locally determined priorities?

Mr. FINKELSTEIN. Although it does establish national standards. It makes it tougher, in fact, to divert money into these other areas. But yes, if the specific situation in any given State is such that they can document the case that the most rational use of money is in one of the other areas, then it is possible to spend money in those areas.

Mr. WALKER. Thank you.

Mr. GORE. It is rational to conclude that the States, if they have 50 percent of the amount that they used to have and they no longer have the requirement to spend any of the money on driver education, there is going to be less driver education. For those who support driver education programs, that would seem to be a distressing development.

Mr. Finkelstein. There would certainly be less federally supported driver education. The Federal Government has never been a senior partner in highway safety.

Mr. Gore. You don't really think driver education is that vital anyway, do you?

Mr. Finkelstein. No, not personally.

Mr. Gore. No. And Mr. Peck doesn't either, does he?

Mr. Finkelstein. I don't know what Mr. Peck thinks on that.

Mr. Gore. That is our information.

So it wouldn't really bother you if they did just cut it out?

Mr. Finkelstein. I think there are better uses of the money.

Mr. Gore. OK.

Mr. Walker. Would the gentleman yield?

Mr. Gore. Yes, I will yield?

Mr. Walker. That is interesting. I gather from your opinion, then, if we are not promoting driver education, the kind of thing that eventually encourages people to buckle up, then your concept of what the great American highway should become is a series of padded M-1 tanks that everybody is well protected in and is, therefore, a safety highway system.

Mr. Finkelstein. No, sir.

Mr. Gore. They don't want that either. They don't want training or——

Mr. Walker. It seems to me that that was the direction we were taking—the Department—not too long ago. It seems to me the American public said very clearly that they didn't like those kinds of cars when they stopped buying. Any chance that we have of getting the automobile industry back on its feet are by building cars that people want to drive.

Thank you, Mr. Chairman.

Mr. Gore. Let me ask you one final question. You have this seat belt public relations program. In your internal documents, your estimates of what this program is going to do, what percentage of American drivers do you anticipate will use seat belts at the conclusion of your campaign to encourage them to do so?

Mr. Finkelstein. We have not done a major analysis of what the——

Mr. Gore. Such analysis as you have done, what figures have you reached?

Mr. Finkelstein. Realistically, if we could get to 30 or 40 percent, it would be a very, very successful one.

Mr. Gore. Thirty percent is the figure you use in the internal documents; isn't that correct?

Mr. Finkelstein. Yes.

Mr. Gore. What about the other 70 percent?

Mr. Finkelstein. I think Don Friedman's testimony suggests—rather said straightforwardly—that the program of the agency is turning to protection for unrestrained occupants.

Mr. Gore. The best you think you can hope for with your campaign to encourage seat belt usage is 30 percent?

Mr. **Finkelstein**. No. I said that what we are saying now is that we hope to reach 30 percent.

Mr. **Gore**. But that is what? Be candid, please, Mr. Finkelstein. Your documents show that 30 percent is the upper boundary of what you hope for.

Let me just ask you for a candid response to this question: How realistic do you think it is that you really will get as high as 30 percent?

Mr. **Finkelstein**. I think 30 percent is reachable.

Mr. **Gore**. You think you will reach it?

Mr. **Finkelstein**. I think if you look at——

Mr. **Gore**. Do you think you will reach 30 percent?

Mr. **Finkelstein**. Yes. I think if the program is carried out, if the program is sustained, if the funding continues to be available for it, I would expect that within 3 or 4 years you would have seat belt usage at 30 percent. But that is, at best, a personal estimate.

Mr. **Gore**. Yes, and it is an upper boundary, correct?

Mr. **Finkelstein**. No. I think we can reasonably expect that. I think that, looking at other programs——

Mr. **Gore**. You don't really think it will go above that?

Mr. **Finkelstein**. I think we can go above 50 percent. I think 40 to 50 percent is——

Mr. **Gore**. When do you think you could reach 50 percent?

Mr. **Finkelstein**. I don't know. I don't know if that is reachable.

Mr. **Gore**. In this century?

Mr. **Finkelstein**. I don't know if that is reachable ever.

Mr. **Gore**. You don't think it is ever reachable?

Mr. **Finkelstein**. In the absence of mandatory belt use laws.

Mr. **Gore**. The real question is—this is a practical matter. You are recognizing the obvious. Only 10 percent, not even 10 percent, of the American public now uses seat belts. You hope that with this ambitious program that you have to encourage people to use them will get up to 30 percent.

Really, the other 70 percent of the people are going to continue to go through these avoidable events, correct?

Mr. **Finkelstein**. Some of it would be avoidable, correct.

Mr. **Gore**. That is some of what we hope to explore further with Mr. Peck when he attends, hopefully, next week. I apologize to our guests for this hearing lasting quite as long as it has, but it has been interesting and productive, I think and hope. When Mr. Peck sets a time that is convenient to the subcommittee and to him, we look forward to pursuing these issues with him, and we look forward to your further appearance also, Mr. Finkelstein?

Mr. **Finkelstein**. Thank you very much.

[The prepared statement of Mr. Finkelstein follows:]

STATEMENT OF MICHAEL M. FINKELSTEIN, ASSOCIATE ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION, BEFORE THE SUBCOMMITTEES ON TRANSPORTATION, AVIATION AND MATERIALS, AND INVESTIGATIONS AND OVERSIGHT, HOUSE SCIENCE AND TECHNOLOGY COMMITTEE, ON THE SUBJECT OF SMALL CAR SAFETY RESEARCH, NOVEMBER 30, 1982.

Mr. Chairmen and Members of the Subcommittees:

I want to thank you for the opportunity to testify before your subcommittees today on the subject of small car safety research.

As the Federal agency charged by law with responsibility for motor vehicle safety, the National Highway Traffic Safety Administration has watched the sharp increase in small car sales with misgivings. From our crash tests we know that in collisions between small and large cars, the small car is generally the loser. From our fatality data, we find that in such crashes the small car's occupants are more likely to die. We have therefore been anxious to determine the overall effect of the "small car revolution" on occupant safety. I would like to share some of our tentative observations with you.

A year ago we issued a forecast of accident trends through 1990, based in part on a fatality prediction model in which we made certain simplifying assumptions about accidents. We assumed, for example, that accidents are solely a function of vehicle exposure and that vehicle weight is the primary determinant of fatality. Applying this model to the anticipated increase in the small car population led us to project an increase in fatalities of 10,000 a year by 1990 due to small cars.

We are in the process of refining our general understanding of the accident environment to take other considerations into account, such as the effect that smaller cars will have on pedestrians, motorcylists, and bicyclists, and on the occupants of larger vehicles. In the last instance, for example, we know that small cars are less aggressive to other vehicles, and therefore will cause fewer fatalities in such vehicles. This will offset to some degree the expected increases in small car occupant fatalities.

We also know now that the accident experience in 1981 and 1982 simply does not fit our forecast, in that the absolute number of fatalities experienced on the nation's roads did not increase, as projected, but rather declined from earlier levels. There are several factors that may account for this decline. These include not only such traditionally observed factors as weather and weakness in the economy (particularly where decreased travel by younger drivers results) but also such relatively new phenomena as the apparent positive effects of programs addressed to drunk driving. We would expect increasing safety belt usage to show a positive effect in the future. Entirely aside from these factors, in view of the rapid growth in the number of small cars during these years, we suspect that the actual reduced fatality experience may also indicate that the small car effect is not as great as we had forecast.

Before we can speak with confidence about the overall effects of small cars, we need more detailed accident data. Until 1982 we have had no current data file that would allow us to isolate the effects of size and weight from the effects of speed. Without these data, for example, it has not been possible to say with confidence whether the fatality rate for small cars in single vehicle accidents is higher than for large cars or, if it is, whether the difference is attributable to the characteristics of the cars or to the speeds at which they were driven. We now have a system in place which is allowing us to obtain such data.

The National Accident Sampling System, our representative national sample of all police reported accidents, has now reached an operating level of 50 teams nationwide. In 1983 NASS will investigate 10,000 accidents. This will enable us to take a thorough look at the issue of small car crash severity, not only with respect to impact speed but with respect to the actual injuries sustained by occupants. The data from 1981, which are now complete and undergoing analysis, and the new data from 1982, already represent a significant improvement over the 1979 and 1980 data that we had when we made our tentative fatality forecast. We expect the improved data will enable us to speak with greater confidence about small car safety in the very near future.

Whatever the net effect of small cars on safety might be, it is absolutely certain that as the number of small cars increases, the number of persons injured or killed in small cars will also increase. As the domestic fleet becomes a small car fleet, the problem of passenger car safety necessarily becomes a problem of small car safety.

NHTSA has been at work for a number of years on improvements in vehicle design or construction that could compensate for some or all of the adverse safety consequences that flow from designers having to plan for managing crash energies in smaller size and weight structures. The research safety vehicle (RSV), two of which are available for your inspection this morning, was an attempt to demonstrate that smaller size, relative safety, and levels of styling, comfort and performance commonly expected by owners are not mutually exclusive. It was a program which consisted of a series of contracts to design a small vehicle essentially from the ground up, with totally integrated safety systems.

We believe this attempt was successful as far as safety is concerned. In the process we obtained a great deal of useful information about the potential for improving small car safety. Although we do not now and never really did anticipate that a totally integrated safety vehicle will necessarily be produced commercially, the results of the RSV program, augmented by field data, have enabled us to take the next step we had always planned for this effort: to focus on specific components and sub-systems of vehicles that can be improved within the context of present or forseeable manufacturing operations. I emphasize the "next step" in this effort because of an unfortunate misconception that the RSV program was somehow terminated prior to its completion. The RSV program was completed and we are now addressing prospects that can have a more immediate pay off.

Over the past year we have completed our assessment of research priorities in the crashworthiness area based on the latest accident data and on projected fleet trends. In the crashworthiness areas, our research covers all vehicle classes but continues strongly to emphasize problems which may be more severe in small cars.

Problem identification reports have nearly been completed for several of the new projects. These reports analyze risk factors (as determined from accident data) as a function of occupant characteristics and vehicle parameters such as size, mass, interior dimensions and crash severity.

In the frontal crash protection area we are working to improve steering columns, windshields, instrument panels and frontal structures. One aspect of the frontal research that is important to small cars is a study of vehicle aggressivity. Results from some of our early work suggests that some of the small car/large car incompatibility could in fact be offset by adjustments to structural stiffness.

In our on-going side impact research, the major emphasis to date has been on structural and padding modifications. This has culminated in modifications to a VW Rabbit and to a GM Citation which are now being tested for effectiveness.

Although most of this work can be applied to all classes of vehicles, the projected trend toward smaller, lighter cars is being reflected in changes to test procedures, test devices and safety hardware.

I thank you for your attention. If you have any questions, I would be glad to answer them or to supply the necessary information for the record.

Mr. **Gore**. With that, the hearing is adjourned.

[Whereupon, at 2:50 p.m., the subcommittees were adjourned.]

SMALL CAR SAFETY TECHNOLOGY

FRIDAY, DECEMBER 3, 1982

House of Representatives, Committee on Science and Technology, Subcommittee on Transportation, Aviation and Materials, Joint with Subcommittee on Investigations and Oversight,

Washington, D.C.

The subcommittees met, pursuant to call, at 1:30 p.m., in Room 2318, Rayburn House Office Building, Hon. Dan Glickman (chairman of the Subcommittee on Transportation, Aviation and Materials) presiding.

Present: Representative Glickman.

Mr. **Glickman**. Good afternoon. The joint subcommittee hearing on behalf of both the Subcommittee on Transportation, Aviation and Materials, which I chair, and the Subcommittee on Investigations and Oversight, which Mr. Gore chairs, is pleased to conduct a second day of hearings on the subject of small car safety technology and related issues.

The subcommittee began the hearings early this week and heard from a variety of witnesses on the issue including representatives from the automobile industry, and the former head of the National Highway Traffic Safety Administration.

A lot of serious issues were raised at our hearing last Tuesday. Studies indicate increased fatalities may be as a result of more small cars on the highway. And one of the issues that was raised was that NHTSA seems to be systematically dismantling a number of automobile safety programs according to one or more of the witnesses.

In fact, the former administrator of NHTSA has charged that the agency is now ignoring the law, ignoring scientific facts and ignoring its own recommendations. I think it seems clear NHTSA is shifting its focus to such things as seat belt advertising campaigns.

It is my understanding NHTSA may be spending 10 to 20 percent of its budget on seat belt advertising campaigns and such promotional ads despite the fact history shows they produce little in the way of results.

Mr. Finkelstein was here on Tuesday. Mr. Peck is here today. We are appreciative that you are here. Since you were not able to be here on Tuesday, we felt it appropriate that you be given this opportunity. And in fact, from our perspective it was important that you should have been here in the first place.

Perhaps there was a failure of communication but that is water behind us now. The fact is that you are here now and I believe you will have some statements. But before you start, I want to recognize Albert Gore, chairman of the Subcommittee on Investigations and Oversight

Mr. **Gore**. Thank you, Mr. Chairman.

As was made clear at our hearing this past Tuesday, we are dealing with an issue of enormous importance. In any given year 50,000 Americans die in auto accidents, a number equal to the tragic loss the country endured in the entirety of the Vietnam war. Thus, the question of how well the National Highway Traffic Safety Administration fulfills its responsibilities to the driving public is of direct and everyday concern to us all.

In this context the testimony proceedings earlier this week is all the more troubling. We heard from one knowledgeable and well-respected observer—Dr. William Haddon—who incidentally was the first administrator of NHTSA and now heads the Insurance Institute for Highway Safety—that the Reagan Administration's stewardship at the agency has been a disaster, and we also heard from another former administrator—Ms. Joan Claybrook—who provided details of the many transgressions by NHTSA, details ranging from the use of inappropriate and bad science to allegations of violation of the law. Such reviews are hardly comforting, nor do they bolster the public's confidence in this agency of crucial importance to the public welfare. And I might add that the GAO's review of the agency was not comforting, either.

Our mission today will be to hear Mr. Peck's response to these charges, and to make some determination about the performance of the agency.

Let me say in advance, however, that these subcommittees have other serious questions as well, and we intend to examine those, too.

We appreciate that Mr. Peck found the time to appear here today, and take it as a sign that he views these issues with the same degree of importance as we do.

Mr. **Glickman**. Thank you, Mr. Gore.

Mr. Walker.

Mr. **Walker**. Thank you, Mr. Chairman.

I would like to join with you in welcoming Mr. Peck to these hearings today. And I think that his appearance before us verifies what his staff had said at the previous hearing, that he would be happy to appear. We look forward to his testimony.

I think it is very important that he does come here to testify after the very integrity of his agency was called into question by a couple of the witnesses here before us at the previous hearing.

I think much of that testimony was based upon unfounded allegations and in some cases on absolute falsehoods. I think Mr. Peck may be in a position to clear up some of that misinformation we received at the previous hearing and may be in a position to tell us why the kinds of things going on at his agency at the present time are in fact leading us to safer automobiles, to safer highways and, in the end, a better climate for our driving public.

And so, Mr. Chairman, I thank you for scheduling the hearing so we can hear from today's distinguished witness.

Mr. **Gore**. Thank you.

Mr. Peck, why don't you identify who else is with you for the record. Do you have a prepared statement or not?

STATEMENT OF A. RAYMOND PECK, JR., ADMINISTRATOR, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION; ACCOMPANIED BY: MICHAEL FINKELSTEIN, ASSOCIATE ADMINISTRATOR, RESEARCH AND DEVELOPMENT; COURTNEY M. PRICE, ASSOCIATE ADMINISTRATOR FOR RULEMAKING; RICHARD BURDETTE, DIRECTOR OF PUBLIC AND CONSUMER AFFAIRS; AND FRANK BERNDT, ESQ., CHIEF COUNSEL

Mr. PECK. No, Mr. Chairman. I want to thank you at the outset for the opportunity to be here and extend again, as I hope has been extended through our mutual staffs, my unqualified apology for my inability to be here on Tuesday. I was unaware until Mr. Finkelstein contacted me about lunchtime that the committee was not—

Mr. GLICKMAN. Is your mike on?

Mr. PECK. Somehow, Mr. Chairman, my apologies never get the same—the same attention by public address system as anything else. I began by apologizing again profusely and taking on behalf of the agency the full rap for whatever might occur as a result of Tuesday. We were engaged in an a.m. until p.m. run-through on the President's Commission on Drunk Driving, which was the only opportunity at which I could have been there for that purpose.

I greatly appreciate the opportunity to be here today under all of the circumstances. With me at the table initially, is Michael Finkelstein, Associate Administrator for NHTSA for Research and Development, and who was the principal agency witness last Tuesday.

Also present to be available as needed, behind me are our General Counsel, Mr. Frank Berndt, our Associate Administrator for Plans and Programs, Mr. Barry Felrice; our Associate Administrator for Rulemaking, Ms. Courtney Price; our Associate Administrator for Traffic Safety programs, George Regal; our Associate Administrator for Investigations and Enforcement, the head of which—which includes the head of the Office of Defect Investigation, Mr. Ben Bradford. Head of our data center, Mr. Bill Scott. Bill Bolley, head of our Vehicle Crash program. George Parker, who is the head of our Office of Defects Investigation itself.

The deputy who is most familiar on a day-to-day basis with all of our contract work is detained down at the Department, but will be joining us here shortly.

At the outset, I would like to say that with respect to the committee's interest, I share without qualification your concern that, if the charges, if the allegations made here in the committee room on Tuesday and in a report published recently by Public Citizen entitled, "Reagan on the Road," were it true, you and I and, more importantly, perhaps, the Secretary of Transportation and President would have grounds for serious concern.

I say the President and Secretary because both in accepting this position as he would of NHTSA and in implementing my responsibilities as the head of NHTSA, I have never had the slightest cause to doubt the commitment at the Department level and the Presidential level.

The commitment, in short, on behalf of the executive branch to highway safety, to reducing the terrible carnage that exists on our Nation's roads. I am pleased at what has been happening since we came into the agency. We will close, unless there is some dramatic change in the statistics, we will close this calendar year with the lowest number of fatalities and injuries on the Nation's highways since the year 1963.

We will have brought down substantially, not merely the absolute number of fatalities but the relative number of fatalities. We will be doing so in a climate in which the total vehicle miles traveled will remain slightly above those of preceding years. I hasten to say that the 4500 fewer fatalities that we will have this year are not the responsibility nor can they be properly taken credit for by any administrator of NHTSA.

They are in part due to the economy. They are in part due to changes in driving behavior and patterns. But at the edges, at the margins where we do make a difference, a significant number of them are in fact due to programs which the agency has initiated.

It seems to me that the basic question presented before this committee and of particular concern to this committee involves the mission of the agency and the purpose for which it was created back in 1966. And I must admit that my first involvement with this particular issue arose when early in my tenure, we announced that we intended a concentrated effort on the use of safety belts and drunk driving.

Put in less than eloquent terms, I couldn't believe the flack we began to collect. I could not believe the amount of opposition that immediately was generated by this announcement. It puzzled me. I couldn't understand who some of these people were and why they were so aggressive about our approach toward saving lives.

I discovered, as I completed my preparations for confirmation and my background into the agency, that there was a reason for it. Back in 1966 when the agency was created, it was in the middle of a high amount of controversy in which polarized questions became the issues before the Congress. Those polarized questions were the influence of, in this particular case, an individual, Ralph Nader, and his concerns that vehicles were not being manufactured as safely as they could be.

On the other side, the very powerful influences of those of the automotive industry whose view as expressed in this narrow context, 1966 congressional debates, became memorialized in the phrase: It's not cars that kill people, it's people who kill people. It's the loose nut behind the wheel.

As a result, that polarization between technology approaches, hardware approaches, and other approaches, behavior modification is the usual phrase that is used; became crystallized and polarized at that time and remains a compelling force in the history of the agency today.

As a result, when a newcomer to this field, when a new administration of the agency undertook in the first instance to address the questions of highway safety along the lines of behavior modification, it was taken incorrectly, I assure you, as I have assured other committees in the Congress, as a sign that we were either diminshing our concern for technology solutions, or in the most extreme cases such as represented by this report to which I refer, that we were selling out to Detroit, selling out to the auto industry.

That is unqualifiedly not the case.

It is true that when I took over the leadership of this agency, two startling facts leaped out of the statistics. One-half of all of the accidents that occur on our Nation's highways involve an alcohol-impaired driver or operator. More than one-half of all the facilities and far more than one-half of all of the serious injuries that occur on our Nation's highways occur in vehicles in which the passengers or drivers were sitting on safety belts at the time of the accidents.

Moreover, use of this technology already there, already in place, already paid for, already a part of every vehicle in the fleet, was something which had not been seriously addressed by the agency. I say not seriously addressed by the Agency with some hesitation because we had been doing research, we had been doing statistical analysis of this issue.

What we had not been doing, however, is one critical thing. We had not sought to apply to this problem, 26,000 dead a year, we had not applied to this problem the state of the art that we use every day in selling cereal, in selling soap, in selling political candidates. We had not applied the state of the art technology of identifying why people behave the way they do; whether they could change the way they behave; and how one might appoach that change.

It was important to us for this reason. It represented between alcohol and safety belts, more than half of our total facilities and, as I say, far more than half of our total injuries. But more important, it was an exercise, and represented an opportunity which would begin to have effect today.

If we could persuade one drunk not to take the wheel of a car, if we could persuade one driver or one occupant to fasten his belt before he began a trip, the protection represented by that would begin to apply today.

I have the power, with the stroke of a pen, to require enormous technology in vehicles. I could, if I wished, mandate air bags. It would be 10, 12, 15 years before that technology took place, before it was in fact in the fleet, before it in fact achieved its potential for saving lives.

But what is represented by these two approaches which we initially announced is the potential saving today, a potential saving tomorrow. That was behind our initial approach, and I think also explains much of the controversy, much of the objection to this initial effort.

I would hope that much of that controversy has diminished over the past year and a half. I note that with very few exceptions, the highway safety community, those experts, those professionals in the field, are no longer in the position of criticizing the Agency or challenging the agency's position.

That is not uniformly the case, as was apparent from the hearing the other day. But I suggest that the vast majority of professionals in the area understand not only what we are doing, but how we are doing it.

With respect to the specific issues that were raised the other day, and the specific issues raised in the report by Public Citizen, I do not intend to address them in detail. I say 12 years, now, I guess, experience in the Federal Government, almost 12 years' experience in or around the Federal Government, I have truly never seen a document so replete with factual error.

Mr. **Glickman**. Are you talking about the document prepared by Ms. Claybrook?

Mr. **Peck**. Prepared by Public Citizen and represented in large part by Ms. Claybrook's testimony the other day. I am not now talking about differences in policy. In every public debate, particularly one involving such critical issues as the role of science and technology, or life and death issues relating to the American people, there will always be vigorous and spirited public debate, and there should be, because people in my position have no right not to be held to account in the most stringent possible way for what they do.

We are literally talking about the lives of our Nation. On the other side of the coin we are talking about the economic health of an industry which represents almost one out of every six employees in the country. The fact, however, is that the public debate that occurs and should occur should have a common basis of fact.

Should have a level of responsibility, it seems to me, or else we are wasting enormous amounts of time. I think the report in the testimony of my predecessor transcends that level of responsibile debate. Not in matters of policy. Those I will debate. Not in matters of concern or personal belief. Those I will explain. But in terms of objective fact.

Whether we published a rulemaking. Whether we rescinded a regulation. Whether a number exists in the data of an identified source. In those levels of objective fact this document is unacceptably erroneous. I can only conclude that insofar as any specifics of the document are concerned or any specifics of the issues are concerned, I would be more than happy to discuss them.

At this point I have, as I said, no prepared statement. I would be more than happy to take questions from the committee on any or all of the issues raised earlier in the week, and I thank you for your attention.

Mr. **Glickman**. I am just going to ask a couple questions; then I will go to Mr. Gore and maybe come back later.

Did I hear you right when you said, I wish I could mandate air bags but it would take 12 to 15 years before the technology would come on board?

Mr. **Peck**. No. No, that is not what I—I said something that adds up to a little bit less and a little bit more than that. I said, I have the power to mandate air bags. Anybody as administrator has the power to mandate air bags. If we were to do so, first there would be a limited number of manufacturers that could comply early. There would be a lead time of 3 to 4 years.

With our current rate of replacement of the vehicle fleet, the average 4 million vehicle sales, it would take 12 to 15 years before it got into the fleet. The point I made and the point I want to stress is, a technology change does not have the immediacy of either of the two options we have addressed with much greater emphasis than any prior administration.

Mr. **Glickman**. What are those two options again?

Mr. **Peck**. Alcohol and safety belts. They contribute to more than half of the accidents which occur and they contribute to more than half of the fatalities and injuries which occur in accidents that do occur.

Mr. **Glickman**. I took your quote—I wrote, I wish if I could mandate air bags. That is not correct?

Mr. **Walker**. No, he said the power to mandate air bags.

Mr. **Glickman**. No, the original quote.

In any event——

Mr. **Gore**. Mr. Chairman, if I may inquire how much difficulty would it entail for the reporter to read back that portion of Mr. Peck's statement.

[The record was read by the official reporter as requested.]

Mr. **Gore**. Thank you.

Mr. **Glickman**. Now, I want to go to another thing.

You have made a lot of reference to the document by Public Citizen. You say you have never seen anything so inaccurate. Yet you indicate that you don't wish to go into the details of the document very much. You said you might argue policy issues but nothing else.

Let me give you one point. In Ms. Claybrook's testimony, she states the following: During the past 20 months, it—meaning NHTSA—has ignored the law. It has ignored scientific facts. It has ignored its own staff recommendations. It has abandoned its independent research activities, initiating instead a so-called secret cooperative research project with the automotive industry.

It has discontinued all fuel economy research as well as the RSV research program. I wonder if you might comment on that portion of her testimony as I am sure it is reflected in the Public Citizen report as well.

Mr. **Peck**. I would be glad to.

Mr. **Glickman**. On page 4.

Mr. **Peck**. Thank you. It has ignored scientific facts. One of the issues that I discovered in our review of our regulations and pending regulations was an almost appalling disregard for the scientific basis of those facts as developed by our scientists.

One of the first steps that we took was to address the Agency's scientific expertise for the first time to two sets of questions. First, the cause and direct relationship between performance and accidents, and accidents and injuries. The result of that exercise was published by the SAE and was presented to the automotive world—excuse me, to the SAE's annual congress in Detroit in February 1982.

I think it particularly ironic that it is language from that that is quoted in criticism of the agency because it is precisely that project of which I am the most proud. For one of the very first times in the history of a regulatory agency we approached it from a scientific standpoint.

What do we know and what can we learn and what do we need to learn before we can take the next generation of steps. Far from ignoring that report, I personally introduced the panel of discussants and authors of papers in Detroit at that time.

Mr. **Glickman**. I want to get a little more specific. Is it a scientific fact that air bag technology is 12 to 15 years away?

Mr. **Peck**. In the fleet as I described it, yes, of course.

Mr. **Glickman**. How about passive restraint technology?

Go ahead.

Mr. **Gore**. If the chairman will yield, that is a tricky answer.

You are not saying air bag technology is 12 to 15 years away, are you?

Mr. PECK. No.

Mr. GORE. I thought you did.

Mr. PECK. No, let me explain it. I said that at the rate of turnover in the street, 4 million new cars a year, and with the lead time of probably 2 years for the most advanced manufacturers, certainly at least another, or 2 more for all manufacturers, it would be anywhere from 2 to 4 years before it was even able to be covered in lines of new cars.

Mr. GORE. I understand what you are saying. You are saying it would take that long for the fleet to turn over.

Mr. PECK. That is correct.

Mr. GORE. Any new technology introduced to the fleet would not be in the entire universe of autos on the road; 12, 15 years. But the technology itself, when do you think it is ready to be introduced into the fleet, right now?

Mr. PECK. In terms of design it is probably available now. In terms of actually getting it into new cars as opposed to retrofitting new cars, I think realistically 1985 is when we will see them offered as options. Model year 1985.

Mr. GORE. Didn't your staff conduct a study of that exact question and come to the conclusion that by September of 1984, 85 percent of all the manufacturers could comply with it?

Mr. PECK. No. The report I think to which you refer and which is usually reviewed as 85 percent, though in fact the number is 81.9 percent, it was a report in connection with our filing before the Circuit Court of the District of Columbia with respect to passive restraint belt systems.

With respect to those systems, it was our judgment that expressed as a percentage of the total new vehicle fleet, as many as 81.9 percent, not taking into account economic resources and manpower resources, could be equipped by that earlier date.

But the point is, not taking into account whittles the number down significantly and the 81.9 percent which is the correct reading of the 85 is terribly misleading in this regard. It refers to a percent of the total nuclear fleet, not to lines of cars. It is misleading because when you think about 81 percent of cars, it sounds like an awful lot. And it sounds like that should be acceptable.

What it really means is not 81 percent of a manufacturer or 81 percent of a line of cars. It means stated in the converse. Eighteen or 19 percent of all lines of cars would have to go down. And that would drive virtually all companies out of existence.

Mr. GORE. Well now, I have the document here and it says 85.3 percent.

Mr. PECK. That is right. If you look at the chart, sir, that is—the document does indeed say it there but the cumulative set of numbers which are expressed about 2 pages later in the chart——

Mr. GORE. It says cumulative percent, September 1984; 85.3 percent. By September 1986, 100 percent.

Mr. PECK. That is right. That is a typo in that description of the text. And it is one of the reasons why that report was not routinely published.

If you look at the chart, the table which breaks it down by manufacturer and by year, the correct number is 81.9.

Mr. **Gore**. Well, 81.9, 85.3, that is still a pretty high number.

Mr. **Peck**. I agree.

Mr. **Gore**. Did you order this thing destroyed?

Mr. **Peck**. No, sir, to my knowledge——

Mr. **Gore**. Did you order all copies collected?

Mr. **Peck**. No, sir, I did not.

Mr. **Gore**. Courtney Price is here. I wonder if I could ask her a quick question on this point.

Mr. **Glickman**. Sure.

Mr. **Gore**. Could you sit there?

What is your title at the agency?

Mr. **Peck**. While we are arranging a microphone for Ms. Price, let me interject, Ms. Price was not physically present; she was on travel during the episode you are referring to which have been reported and dutifully repeated as charges of outrage against the agency.

Mr. **Gore**. Do you want to just respond?

Ms. **Price**. What is the question?

Mr. **Gore**. Evidently, you are aware of what has been brought to our attention, the allegation that the report was prepared and that it showed such a high percentage could comply with the passive restraints by September of 1984. That you and another employee, Mr. Byrd, went down and collected the copies and word processing disk. And you are saying that is just not true?

Ms. **Price**. What is your question? At the specific time to which you refer, I think, as Mr. Peck stated, I was on travel. But I am not really sure that I understand what your specific question is.

Mr. **Gore**. On October 4, a Monday——

Ms. **Price**. On a Monday?

Mr. **Gore**. Monday, October 4, 1982, did you pick up all available copies—did you pick up the copies of this study, or ask someone to pick them up and the word processing disk on which it was contained?

Ms. **Price**. No, I did not. I may have looked on Monday, October 4 for a copy. But I did not——

Mr. **Gore**. Did you at any time pick up the copies, or order them collected?

Ms. **Price**. No, I did not order them collected.

Mr. **Peck**. Mr. Chairman, can I give a brief narrative of what happened? Maybe we can focus attention because it has been the subject already of an exchange of correspondence between myself and Chairman Wirth, and has been raised in the pending lawsuit.

Let me tell you exactly what happened. We were directed in July——

Mr. **Gore**. I will tell you what, Mr. Peck. If it is OK with you, if it is not, you can go ahead. It is OK with me if you want to provide that for the record. If you want to dispose of it orally now, that is OK with me. But I am content for you to do it for the record.

Mr. **Peck**. Let me just tell you very briefly what happened.

Mr. **Gore**. OK.

Mr. **Peck**. A little bit after 5 p.m. on the afternoon of the day we were due to file with the court of appeals a document, a—filed with the court of appeals a recommendation as to whether the industry could meet with the date previously established by the court of appeals, or whether a longer time was necessary, we discovered in the agency a document that had not been seen before by anybody present.

Now, this was a little bit after 5 p.m. on a Friday. Chief Counsel, Mr. Berndt, who is sitting behind me here, brought it to my attention and to the attention of the director of the office which was responsible for the generation of the document. It was in a different format from any previous iteration of the document, and the question we had at 5 p.m. on a Friday afternoon on the day we had to make a filing before the court was, is this something new and/or is this something different?

Ms. Price was the author and the signatory of the affidavit which supported the Government's filing in that court. She was on travel. Mr. Berndt's staff, who had, during the course of the week, been accepting numbers and accepting views and all that were not there. They had already left for the day. The filing had been made.

But my concern was if this was either new or different we might have an obligation immediately to go back to the court. Now, Mr. Berndt went to Mr. Nash; is Crown here? Maybe one of the agency personnel who is not here today, and said what is this? Karl said: It's nothing. It's what we have been giving counsel's office all week. Karl came in and assured me that that was the case. That in fact he, who is deputy to Ms. Price here, had not only had this information but had reviewed it and had taken it into account, and had gone over with Ms. Price the agency's affidavit word for word.

There was nothing new; nothing inconsistent; there was nothnig different. And at that time Mr. Nash assured me there was nothing that hadn't been already within the decisionmaking process of the agency.

Based on his assurances, I decided not to go to the court Friday afternoon, but on Monday Mr. Berndt prosecuted the question through and established that that was the case, there was nothing different about the document; there was nothing novel about the document.

And we decided not to make a supplementary filing. It was introduced into the record and we responded——

Mr. **Gore**. You told the court, on more substantive matters than this, that there was significant doubt that the companies could technically comply with the standard by 1986, did you not?

Mr. **Peck**. Yes, we did. I am assuming—yes, we did. 1986 model year. Model year 1986; that is right.

Mr. **Gore**. Your own study says that by September 1984, well over 80 percent, whether it is 85.3 or 81.9, could comply in 2 years—or by September 1984.

Mr. **Peck**. A year earlier. One year earlier.

Mr. **Gore**. Yes. How do you——

Mr. **Peck**. Well, that is what I was trying to get at before. The fact that 80 percent of the total number of vehicles might be able to comply does not mean that a mandatory compliance would be reasonable, practical——

Mr. **Gore**. No, no, no. What you told the court—you say model year 1986. That would be what, September 1985?

Mr. PECK. Right.

Mr. GORE. Your own study says that by September 1985, 98 percent of all cars produced could comply.

Mr. WALKER. That is when the 1986 model year would start?

Mr. GORE. That is right.

Mr. WALKER. Well, that is what he is saying.

Mr. GORE. No. The study says that by model year 1986, September 1985, 98 percent of all the cars——

Mr. PECK. That is correct.

Mr. GORE. [continuing]. Could comply.

Mr. WALKER. Which is exactly what he said.

Mr. GORE. Correct, but that is not what he said to the court. That is the point. You told the court that there was significant doubt that, by model year 1986, you could, the automakers could comply.

Mr. PECK. No. I think we are confusing calendar year and model year.

Mr. GORE. You are the one who said calendar year 1986.

Mr. WALKER. No, he said model year.

Mr. GORE. I mean model year 1986. What did you tell the court, calendar year or model year?

Mr. PECK. We addressed model year. However, we did it and I am sorry it is traditional the way you discuss it, we did in by reference to a date. That date is September 1, 1985.

Mr. GORE. All right. Did you tell the court that by September 1, 1985, there was significant doubt that the automakers could comply with the standard?

Mr. PECK. We don't seem to have a copy of the filing; but yes, we did.

Mr. GORE. Your study in the agency said by September 1985, 98 percent could comply.

Mr. PECK. That is correct.

Mr. GORE. Why did you tell the court something your study indicates is inaccurate?

Mr. PECK. I don't see the inaccuracy, I am sorry.

Mr. GORE. Well, let me run through it again, tell the court, by September 1985, there is significant doubt that the automakers can comply. The study says by September 1985, 98 percent can comply.

Mr. PECK. Mr. Chairman, may I ask for a copy of the filing? Maybe I inaccurately or incorrectly agreed to something before as to what we said. Frank, do you know—I am sorry, this is Mr. Frank Berndt, Chief Counsel of the agency.

Mr. BERNDT. I hope to be able to clarify it a little.

Mr. GORE. Speak up, please.

Mr. BERNDT. In the court filing we said that, to the best of our knowedge, based upon the information that we had at the time, the industry could probably comply by 1985, which was model year 1986.

Crown Nash's document, Crown didn't think that was totally consistent. That was not the only document upon which the decision was made. There was another study made by——

Mr. GORE. If I may interrupt at that point, and you can come back and complete your response if you desire to do so, your testimony is that you told the court that the automakers could comply by September 1985?

Mr. **Berndt**. No, we didn't say that. We said that would be the earliest date that would be possible.

Mr. **Gore**. Did you say that there was significant doubt that they could comply by that date?

Mr. **Berndt**. No.

Mr. **Peck**. I think that language was used with respect to model year 1985, which would be September——

Mr. **Gore**. No, don't get back into that now, Mr. Peck. That is a completely unnecessary confusion interjected into it. Mr. Chairman, we are getting——

Mr. **Peck**. Do you have a copy of the filing?

Mr. **Gore**. I mean the model year-calendar year, we have got that worked out. I don't think there is any problem there. Mr. Chairman, I would like to come back—when the staff is getting the filing, and I would like to come back. I will defer at this time.

Mr. **Glickman**. The decision to pull the passive restraint system——

Mr. **Peck**. To rescind standard 208?

Mr. **Glickman**. Rescind 208. Was that a scientific decision or a political decision?

Mr. **Peck**. Well, it was as scientific as could possibly be made. I don't mean by that it was as political as could possibly—I am saying it was entirely scientific and entirely based on safety. And that element, the focal point of that decision, was the rate of probable disconnection of passive belts.

Mr. **Glickman**. But I understand, Mr. Peck, on Tuesday Mr. Finkelstein testified that he thought that passive restraints were the most effective means of improving auto safety and that he advised you to keep section 208 intact.

Mr. **Peck**. Without purporting to correct Mr. Finkelstein's testimony, that, if exactly correct, would surprise me because of this fact.

Mr. Finkelstein, as did not many but all of the Department's Agency, urged me to maintain the standard because although there would not be a sufficient amount of increase in usage to justify it on a cost-benefit basis, there would be some and any would be helpful.

Mr. **Glickman**. I did not understand the last sentence at all.

Mr. **Peck**. Originally, when the standard was adopted, the numbers that were bandied about as the potential savings of lives were 9,000. The original estimates made as to potential usage was 70 or 75 percent. Those had disappeared entirely in the 4 years since the standard had been adopted.

We were now talking about a potential benefit, because the fleet had no air bags but only belts; a potential benefit of anywhere from 0 to 5 percent increment of usage.

Mr. Finkelstein's argument, and it was not alone within the Agency, was that even that much of a benefit would justify keeping the standard, even though from a cost-benefit standpoint it would be not justifiable. That was Mr. Finkelstein's argument then.

Mr. **Glickman**. You know when you talk about cost-benefit analysis showing that it is not justifiable, I recall seeing the Insurance Institute's slides. They showed all those numbers about automobile deaths. They showed that the Volkswagen Rabbit with the passive belts were responsible for lower fatalities in accidents than any other cars in the class. Doesn't that indicate to you that that particular option would have more than a zero cost benefit?

Mr. **Peck**. Let me say this: If in fact the VW Rabbit belt configuration were what was going to be produced under the standard, then I would have kept it, because a usage rate at that level would clearly, not merely, be cost-justifiable; it would be in fact in the best public interest.

The problem was these belts were not anything like that belt. In the very specific elements of use inducement that cause the VW Rabbit belt to be so high. A more significant statistic, when you get right down to what would we expect under this standard, was the fact that VW Rabbit active belt users running at 40 to 45 percent, and that the Chevette passive belt had been adopted voluntarily by only 3 percent of the purchasers of that system.

Mr. **Glickman**. Let me ask one final question; then I will go to Mr. Walker because he has been waiting. Subsequent to your decision on section 208, I believe that you promised a full-court press on air bags.

Mr. **Peck**. I think that was my phrase at the press conference; that is right.

Mr. **Glickman**. Yet today I think NHTSA has only initiated one program to put air bags in 250 police cars in Arizona and is still in the process of putting them in federally owned passenger vehicles. Is this what you call your full-court press?

Mr. **Peck**. No. There are three, as I have testified before Senator Danforth; there are three efforts that we have underway. The first, and the first one you referred to, is a capability we have had only recently. That is the ability to confidently predict a successful experience with retrofit driver's-side air bags in vehicles.

That is being implemented by the requests for proposals and the contract the agency is prepared to enter into. The RFP was published on October 25, whereby three State police vehicle fleets would be retrofitted with driver-side air bags.

Second, with respect to new car vehicles, we are talking to all manufacturers who have the capability of providing air bag technology, and have been turned down by none, and assured by most that, in fact, this technology is able to be offered in new cars in model year 1985.

Third, with respect to that issue, which is new cars versus retrofit cars, we are talking to the General Services Administration to insure that the compact fleets purchased by the Federal Government, which will be 3,000 to 5,000 vehicles in model year 1985, will be so equipped with new car systems.

Mr. **Gore**. Very briefly, Mr. Chairman, we have located your filing with the Court, Mr. Berndt. This is the filing before the Court by your agency entitled, NHTSA's Memorandum in Response to the Court's August 4, 1982 Order. And I quote from the bottom of page 8:

"There remains considerable doubt that uniform compliance could easily be achieved even in September 1985."

Mr. **Peck**. That is exactly correct.

Mr. **Berndt**. 1986-model year. That is right.

Mr. **Peck**. That is right.

Mr. **Berndt**. The question——

Mr. **Gore**. Now let me just complete this. Then you can respond. Your internal study, the one that was the subject of this exchange earlier, says, quote: "By September 1, 1985, 98 percent of total production could comply."

Mr. **Peck**. Mr. Chairman, there are two factors which I have tried to address. Let me try one more time. First, that report did not take into account the economics or the resources available. If you will look at page 24 of that report and compare it to page 22 of that report, you will indicate—you will discover that the assumptions made by the draftsmen were that vehicles already with completed passive restraint designs would be able to comply.

The 98-percent number refers to a very critical assumption which we know will not be the case in fact; and that is that there would be no change in the 208 standard. Now, that is why the langauge of our filing——

Mr. **Gore**. It says total production, 7,693,677, or 98 percent of total production.

Mr. **Peck**. That is correct, but the assumption there was there would be no change in 208. We know there is going to have to be changes in 208. And at least two of the changes in 208 will affect as many as 3 million cars.

Assuming that the 208 standard is reinstated as the court of appeals did and then reversed itself, because the action taken by me in October 1981 was a recission, it was neither necessary or appropriate for us to handle the other technical issues that relate to passive restraints.

They include coverage of the center-front seating position, dynamic testing requirements, and the specifics of the configuration of three-point versus two-point belts. If we have to go back to 208 because the standard as a whole is reinstated, we are going to have to handle those questions.

And those questions are going to make changes in the basic assumptions, and that is what that report did not take into account and said that I did not take into account.

Mr. **Gore**. Mr. Peck, I will come back to it.

Mr. **Glickman**. Let me get to Mr. Walker.

Mr. **Walker**. Thank you, Mr. Chairman.

I would first of all like to say that if you are managing as many conspiracies as we have heard today and the other day in your Department, I am going to recommend you for the next head of the CIA. I think that conspiracy managment may be your forte.

Mr. **Peck**. Thank you, I think, sir.

Mr. **Walker**. I am interested in going back to the point that you raised in your testimony; that in fact some of which, some of the material which we heard before this committee may in fact be based upon not only erroneous reports and testimony, but actual falsehood in terms of factual data.

I think you said there were errors in fact in some of the material that came before the committee—I think it is important based upon the fact that there were specific allegations made before the committee 2 days ago, that we deal with some specificity in refuting some of those allegations.

So I would appreciate your, if you would, pointing out to us where those errors in fact are occurring. And in particular I think there are even some instances where the testimony we received, or at least the report that was presented to us, blamed you and your administration for decisions that were made by the past administration.

And I think it would be very well for this committee to know that.

Mr. **Peck**. Well, without attempting to prioritize the considerations, let me briefly address some of the issues. Increases in deaths predicted by 1990. The fact is that the study on which that reference is made was a baseline study assuming no change in circumstances. Since it was published there have been very significant changes in circumstance.

Use of those numbers for the traffic fatalities matter is simply invalid. Critical to this committee's concern over small cars is the fact that we have simply not seen developing in the accident statistics the small car phenomenon that we predicted.

That is in large part attributable, we believe, to the fact that in small cars, seat belt-usage rate runs at about 18 percent as compared to until recent years, 10 or 11 percent for the whole fleet, 7 percent for large cars.

With respect to the passive restraint decision, it stands on the record.

With respect to the research function of the Agency and specifically the research safety vehicle, it is simply a flat misstatement of fact to characterize that program as terminated. The program was a finite attempt to produce a set of vehicles. It was in fact accomplished. It was accomplished in the prior administration. It was completed in the prior administration. And there is no RSV program now underway or ever intended to be underway.

The critical question from the standpoint of this committee is, what about other programs related to research and particularly, small cars. And all of those programs are continuing exactly as they were anticipated by the prior administration, and in exactly the same way under our administration as would otherwise have done so.

There are some facets of it that receive less funding. That is correct. But that is because facts that we have developed do not justify those parts of the program. There are other aspects which are funded to a higher degree. That is because the facts justify that level of concern.

With respect to the cooperative research program, I swear to God I don't know how you can call it a secret. I have testified about it. I have taken great pride in both public statements and testimony before the Congress about it. It has been published in the Federal Register; the docket exists. Every single piece of paper to my knowledge that relates to it is a matter of public record.

Mr. **Walker**. This is one of the most insidiouis of the conspiracies we heard of.

Mr. **Peck**. Yes, it is. I am sorry, I know what the printed record will look like.

Mr. **Gore**. Will my colleague yield?

Mr. **Walker**. I will be glad to yield, although I am just grateful to get some time here. I sat here I think fairly calmly for about a half our, 40 minutes of railing from your side, but I will be very glad to yield.

Mr. **Peck**. Mr. Chairman, if I might make one point, the underlying reason why we even consider looking at that was Secretary Goldschmidt's report which recommended precisely this approach. I am sorry, sir.

Mr. **Walker**. I thank you for that. Yes, I will be very glad to yield.

Mr. **Gore**. The only reason I asked my colleague for this courtesy which I deeply appreciate, is the statement that you made about it being the cooperative agreement being published in the Federal Register.

Mr. **Peck**. Stated in the Register, yes.

Mr. **Gore**. Pardon me?

Mr. **Peck**. Stated in the Register. Disclosed in the Register.

Mr. **Gore**. The Register. First of all, could you supply that? Was it outlined in the Register, the nature of the agreement, and what the agenda is, and the agreement itself?

Mr. **Peck**. That is in the Congressional Record. Well, I am—excuse me. No. I did not mean to state, if I did, that specific documents have been published in the Federal Register.

Mr. **Gore**. It was in response to a question, you were saying in response to a question about it being secret that it was publicly available. And during that response you said it had been published in the Federal Register.

Mr. **Peck**. I am sorry.

Mr. **Gore**. I just wanted to see if that is what you meant to say.

Mr. **Peck**. Its existence was referred to specifically in the Federal Register in a number of different contexts.

Mr. **Gore**. I thank my colleague for yielding.

Mr. **Walker**. Well, as you pointed out, then, you followed that up before Senate committees and before House committees, explaining the details of what you are doing, so that that is the kind of public documentation, I mean at least we assume that somebody does pay attention to what we do around here. That may be an erroneous assumption, but we like to think so, anyway. That is the way we earn our salaries.

But go ahead. I would appreciate you having the record cleared up on several of the other points that you were proposing on.

Mr. **Peck**. With respect to the papers disclosed at the SAE paper, I remind again the committee that the quoted language addressing the importance of the issues specifically of steering column is our language. We have followed up on that with a series of both research and rulemaking, including the one that is cited in testimony before the committee as a withdrawal or a weakening of one of our standard related, 203 and 204. That is just absolutely untrue.

What we had was a situation in which the test protocol for one of the two standards was different from the others and was producing less important data than combining the two test protocols into one format would have produced. We didn't weaken any of the standards. We changed the test protocol and, as a matter of fact, to refer to the report, Reagan on the Road, it is precisely that action that is addressed with approval elsewhere in that document.

Mr. Finkelstein, always anxious to take a share of the blame, points out that this has been recommended within the agency for a substantial amount of time. With respect to the SAE, it stands by itself. One of the benefits of the program has been to highlight the degree to which safety can be built into production vehicle cars.

RSV's are not locked in the basement. We continue to make them available as we always have. As a matter of fact, we came very close to not being able to make them available to the committee last Tuesday because the last time we sent them out to a high school, both of them broke. And we had to get them back from the garages in order to make them available here.

And one of them broke down on the way back to the Department. We do indeed make them available. If an extraordinary amount of expense is involved, we ask the sponsoring organization to pick up the travel expenses. That is it.

Insofar as——

Mr. **Walker**. I assume you had a warranty for those?

Mr. **Peck**. No, of course not. For $349,000 we didn't get a warranty, no.

Insofar as I think my two favorite elements of this document are concerned, and to give you some flavor of what we did in terms of going through our research budget, one of the first things that the deputy who has now joined us did was to go through all of the contracts to see what they were and what they were for.

He found a contract, name of the contractor we will call "X." It was for $249,557. The purpose of the contract was to investigate, study and report upon the effects of centralized decisionmaking in State motor vehicle inspection maintenance and repair programs.

That is a quarter million dollars. In the computer printout the next contract, contractor X, amount of contract, the same amount, $249,557; purpose of the contract was to investigate, study, and report upon the effects of decentralized decisionmaking in State inspection motor vehicle, and in State motor vehicle inspection, maintenance, and repair programs.

Further down, 10 or 15 contracts in the printout from the computer was a contract for, if memory serves, $187,000 to the same contractor for the purpose of evaluating contracts 1 and 2. We did not hesitate to cancel those three contracts. That was $650,000 of agency money. I didn't hesitate to cancel it and I will defend that cancellation before anybody in the world.

Second, mentioned specifically by my predecessor in her testimony on Tuesday was something we have lovingly called within the agency, the spy camera. It was about a half a million dollar contract. It is described by my predecessor as a terribly important advantage in reducing the, what, manpower resource requirements of traffic enforcement.

What it was was a proposed feasibility study for a mechanism whereby we would have automated speed measuring devices imbedded in the framework of the road surface, and an automated camera would take the picture of the license plates of cars that traveled faster than the speed limit so that States could then mail to the owner of the vehicle a traffic ticket.

Now when it first turned up the deputy turned it down. And an appeal was taken by our staff. The argument was, well, it's in use in Europe. Well, first if it is in use in Europe I am not sure I understand why we need a feasibility study for a half million dollars here. In any event, I raised it at our senior staff meeting.

The issue came up. I said, I know there have been three memos on the subject. I want you all to know why I am not approving this proposal. It is not that I am not approving it because it is silly, although it is. It is not that I am approving it because it is a waste of money since it is already in use in Europe, because it is. It is not that I am not approving it because I have discovered since getting this proposal that the precise device was used unsuccessfully already 3 years ago in two different States. I am not approving it because it is a fascist scheme. I am not approving it because in this country we have a Constitution, and regardless of the experience in Europe and regardless of the efforts underway through years ago in two different States, the fact is you can't send a traffic citation to the owner of a license plate based upon a traffic of a car that may or may not have been traveling the speed limit.

If you come up with some better way to handle it that doesn't have constitutional problems, I will be glad to look at it.

Now, I hope I need not assure the committee that this administration is in favor of law and order, and will tend in an appropriate case, indeed, in every appropriate case, to maximize the efficiency of the law enforcement resources that implement our traffic safety laws. But the spy camera, no.

Mr. **Walker**. Well, I thank you very much and I think it is important to have some of that kind of clarification on the record.

I am afraid that the genesis of these hearings in large part relates to the material developed by some of your opponents, and that the reason why we are here is therefore based upon documents which are erroneous in fact, and that I think presents a very disturbing element to the background of these hearings and raises a good deal of caution about the stock that should be put in the final report of this hearing.

But I again want to thank you for appearing. I am sorry to say that I have to get out on the road and head for Pennsylvania, but I do appreciate your testimony.

Thank you, Mr. Chairman.

Mr. **Glickman**. Mr. Peck, first of all I want to make the record clear. We are not here because Joan Claybrook wrote a book called Reagan On The Road. We are here because the GAO came out with a report which said that NHTSA did not have an accurate enough accident data base to determine the key factors on the whole issue of small car safety. That is why we held these hearings. And that is why we felt it was important enough for you to be here. We have thousands of people getting killed each year and maybe we can do a better job of protecting ourselves against the hazards of automobile accidents.

Mr. **Walker**. I think that is fine, Mr. Chairman. I am only sorry that so far the questions have not even related to the GAO report. Most of the questions that we had posed at the hearing the other day somehow didn't get around to the GAO report, either.

Thank you.

Mr. PECK. Mr. Chairman, may I repeat my remarks in my opening comments? I fully recognize the legitimate purpose and intent of the committee's hearings and fully endorse your concern that if this set of allegations or any set of allegations were true it is a legitimate serious question of concern.

Mr. GLICKMAN. My question is you spent a lot of time talking about you don't like spy cameras. You spent a lot of time talking about what you are not going to do. Now, I want to know what you are going to do. The GAO has come out with a report saying we have a real problem with small cars, and we don't have a data base to deal with the relevant safety questions there to protect passengers in the future. I want to know what you are going to do with regard to the specifics of this hearing, and specifically what you are going to do with respect to the GAO's recommendation?

Mr. PECK. Let me turn the microphone over to Mr. Finkelstein, who is far more familiar with the GAO——

Mr. GLICKMAN. No, no, I want you to answer. You are the head of the agency; Mr. Finkelstein is on record already.

Mr. PECK. Let me tell you not only what we have decided to do but how we decided to do it. Mr. Chairman, I was concerned that we would have an answer to questions like that because, as I indicated before, one of the things we discovered in the agency as it was a basically hit or miss situation.

Much of the agency's early history was controlled by GSA's purchasing standards in 1966 and thereafter by what we happened to have had in house and what someone happened to look at. What we did was this. We undertook a management effort to decide what it was we did to decide priorities. In this regard it is not only research but rulemaking priorities as well. Under the chairmanship within the agency of Barry Felrice, Associate Administrator for Plans and Programs, we divided the agency's total activity into, I think the original number was about 70 or 75 specific projects.

These were not only highway safety, but vehicle safety projects as well. We then over the course of the better part of a year developed detailed descriptions and less detailed descriptions of those projects. Those descriptions were circulated among the agency, along with all of the others, and the result was a spread sheet that ranked the projects both with respect to the degree of priority assigned by the office with jurisdiction and the degree of priority assigned taken overall with the priorities of the other offices. That took 2 days——

Mr. GLICKMAN. Mr. Peck, this is wonderful, but from an administration that does not like bureaucracy I have never heard more bureaucracy today. I like management by objective. I want to know.

Mr. PECK. That is just what I am describing, Mr. Chairman.

Mr. GLICKMAN. OK, then, let's get to what you intend specifically. What kinds——

Mr. PECK. These are the priority projects of the agency in the order in which they were determined.

Mr. GLICKMAN. OK.

Mr. PECK. First is system management and alcohol. Second is public information in occupant restraint and networking. Third is steering assembly. The fourth is crashworthiness support. Fifth is enforcement alcohol. Information, public education, adjudication and driver control systems in alcohol. Next is active restraint. Next is site interior protection. Next is passive restraint demonstration. Next is daytime running lights. Next is child restraint seats. Running down to No. 16 by now we have education and R&D testing of occupant restraints. We have light vehicle side structures.

We have, and this is very interesting because No. 18 is an issue which had never before come up before the agency, because there has never been a management by objectives approach. We discovered in the course of the papers that were disclosed in February of 1982, we discovered a part of the car that is killing and maiming people that nobody had ever thought of before. It wasn't until we went back to look at that data, the glovebox door. In an accident it pops open and becomes a site. We never knew that until we adopted the systematic approach to deciding the real question, what kills people.

Mr. GORE. May I ask you to go over the first four again? First of all, can you supply that document to the subcommittee?

Mr. PECK. I think I probably only have one copy of it.

[The material referred to follows:]

OVERALL PROJECT RANKING

RANK	
1	AL*-System Management
2	OR*-Public Information
3	OR-Networking
4	Steering Assembly
5	Crashworthiness Support: Analysis and Update
6	AL-Enforcement
7	AL-Education/Prevention
8	AL-Public Information
9	AL-Adjudication
10	AL-Driver Control System
11	OR-Motivational Research
12	Side Interior
13	Passive Restraint Demonstration
14	Daytime Running Lights
15	OR-Child Seat Program
16	OR-Education (R&D Testing)
17	Light Vehicle Side Structures
18	Instrument Panel/Glove Box
19	OR-Corporate Outreach Program
20	Light Vehicle Frontal Structure
21	Heavy Duty Vehicle Braking
22	OR-Data and Evaluation
23	Pedestrian/Cyclist: Bumper Softness
24	Emergency Medical Services
25	High Mounted Stoplamps
26	Heavy Duty Vehicle Brake Adjusters
27	Analytic Framework
28	Pedestrian Safety
29	Upgrade Lighting/Signalling
30	Motorcycle Braking (Advanced)
31	Light Truck Ejections
32	Glazing
33	Vehicle Unfamiliarity
34	Roof/Pillar Structures
35	OR-Incentive Programs
36	Commercial Vehicle Conspicuity
37	Motorcycle Safety
38	OR-Use Requirement Policies
39	Heavy Duty Vehicle Retarders
40	Door and Window Ejection (pass Cars)
41	Headlamps
42	Rear View Mirrors
43	OR-Economic Costs Development
44	Police Traffic Services
45	Driver Education
46	Heavy Duty Vehicle Cab Integrity
47	Heavy Duty Vehicle Defog/Defrost
48	Heavy Duty Vehicle Safety Belts
49	Heavy Duty Vehicle Stability
50	Light Vehicle Safety Belt Design
51	Child Restraints, 5-12 Year Olds
52	Driver Licensing
53	Radial Tire Test Methods
**	National Driver Register
**	Traffic Records
**	Pedestrian Protection: Grille, Hood Edge

** New Projects, added after above ranking and not yet prioritized

*AL -- Alcohol
OR -- Occupant Restraints

Mr. **Gore**. Not right now.

Mr. **Peck**. Of course. As a matter of fact, we invited the congressional staff to attend the first half day's worth of sessions and many did——

Mr. **Gore**. Fine. Could you go over the first four?

Mr. **Peck**. Alcohol systems management. Occupant restraint, public information.

Mr. **Gore**. Occupant restraints public information. No. 3?

Mr. **Peck**. Occupant restraints networking.

Mr. **Gore**. Occupant restraints networking. No. 4?

Mr. **Peck**. Steering assembly. No. 5, crashworthiness support analysis and update. Six through ten all relate to alcohol.

Mr. **Gore**. That is fine. Let's stay with one through five. These are your top five priorities. OK?

Mr. **Peck**. Top give of 55. That is correct.

Mr. **Gore**. Top five. No. 1 is alcohol systems management. What are you doing there?

Mr. **Peck**. Well, if I can submit for the record, that comes under crash avoidance.

Mr. **Gore**. No, no. Your top priority is alcohol systems management. What are you doing in pursuit of your No. 1 priority? Surely you know, Mr. Peck. Go ahead.

Mr. **Peck**. No, I am about to introduce the officer who is in charge of that specific project, Mr. George Riegle, Associate Administrator for traffic safety programs.

Mr. **Gore**. I would like to hear from you what the agency is doing. He can join you at the witness table if you like. But I would like to hear from you what you are doing on your top priority.

Mr. Peck.

Mr. **Peck**. Yes, sir.

Mr. **Gore**. What are you doing——

Mr. **Peck**. I am getting out the document that describes it in detail and the document that describes it in greater specificity. With respect to the systems management project, the alcohol program management coordinators in each State and local community are the prime targets of the project. The thrust of the project is to tie together alcohol program components both in communities and at the statewide level.

We have conducted 12 workshops to call together on a statewide—we have generated resource materials and guidelines for developing systems within the States and within the local communities. We have as a target the establishment of at least one comprehensive community-based alcohol program in major communities and regions in each State. To that end we have identified 10 States and local communities as primary targets of opportunity based upon prior experience and the expressed willingness of the community to do it.

With respect to our dollars, we invested into this project in fiscal year 1982, $405,000. In 1983, $642,000. We have budgeted in 1984, $845,000, and in 1985, $1,094,000.

Mr. **Gore**. All right.

Mr. **Peck**. Fiscal years 1983 and 1984 are concerned primarily with technology transfer and the setting forth of the underlying system.

Mr. **Gore**. Could you supply that document from which you are reading for the record?

Mr. **Peck**. I wasn't reading from a document. This is a summary of our resource allocations. It is what we use in making these judgments. However, I would be glad to.

Mr. **Gore**. Thank you very much.

[The information follows:]

Alcohol

System Management

Problem

An Alcohol program requires the skills and services of many professionals including adjudication, probation, driver licensing, traffic records, legislation, treatment, education, case management, public information, management/coordination and evaluation. System management capabilities must be developed to support community based alcohol programs in order to make all of these components work together.

Target Group

The 50 percent of fatalities and 20-35 percent injuries that are alcohol involved. The alcohol program managers/coordinators in each state/local community are the prime targeted users of products resulting from this project.

Thrust or Approach

- Would tie all alcohol program components (enforcement, adjudication, driver control and PI & E) together in community based programs.

- NHTSA has conducted 12 workshops in the past for state/local alcohol program managers and coordinators. We will continue to conduct these training activities.

- We will provide resource materials and guidelines for community based alcohol programs with a view towards making them self-sustaining.

- NHTSA will attempt to establish at least one comprehensive community based alcohol program in major communities/regions in each state leading ultimately to 70-80 percent of population being covered.

- The primary goal is to increase public and state offical awareness of the magnitude of the alcohol problem through state/local efforts.

- Research will be concerned with establishing realistic performance measures and understanding impediments to improving alcohol programs.

Products and Training

Workshops, Technical Assistance, Technology Transfer, reproduction and distribution of resource materials and identification of key communities willing to work with NHTSA.

Benefit/Cost

Community based alcohol programs should provide a general deterrence which is estimated to result in a reduction of alcohol related fatal accidents of between 10-15 percent. However, all of the major components of the system must be in place to achieve this high of an effect. Costs will vary from state to state depending on the stage of development or extent of institutionalization of each component. Major costs will be start-up costs. Once implemented the alochol programs have the potential for complete self-sufficiency by means of fines, fees etc., imposed directly on the DWI offender.

Long-term NHTSA Commitment

NHTSA has had a long-term interest (e.g., ASAP Program) in developing alcohol programs which employ the systems approach. This project will require working with individual communities which are highly motivated and interested in attacking the DWI problem locally.

Issues

NHTSA managers felt that it is important to build upon the ground swell of public opinion which favors doing something about the DWI problem now. All NHTSA managers ranked this project a high priority.

Resources

	(Prior 2 Years)	1982	1983	1984	1985
Dollars		405	642	845	1,094
Man Years		2.1	1.5	1.9	2.6

FY 82 and FY 83 are concerned only with technology transfer and the delivery of management information materials to support establishment of comprehensive community based alcohol programs.

Mr. **Gore**. Public information on occupant restraints and networking on occupant restraints. Those two referred to your seat belt campaign?

Mr. **Peck**. Those and about eight more.

Mr. **Gore**. I am trying to cover your top five priorities. No. 2, your second top priority. Public information on occupant restraints. What are you doing there?

Mr. **Peck**. Well, it is actually—I would like to take the second and third together because they came out a tie. Although they are ranked one and two.

The first refers only to the media effort. That is, only to radio and television. The second refers to the probably more effective effort which is networking. With respect to the media effort we have $850,000 budgeted to the creation and the conduct of research of public service announcements and specific targets, educational messages to be addressed for specific targets of opportunity. They include as a specific target, for example, youth.

Mr. **Gore**. Yes.

Mr. **Peck**. Things like that. What we have discovered already in the research we have undertaken is that no one has ever done this kind of work before. And as a matter of fact, while we are talking about occupant restraints——

Mr. **Gore**. What research have you done?

Mr. **Peck**. Well, the program itself is based on three underlying studies, the most important of which is the one we commissioned with Terence and Associates. It is a report published in September 1981. It was followed by a series of focus groups following up on the report. If I might, the GAO has just completed a major study of the whole program. We have a draft of it. This may be the only draft of a GAO study that goes back with no comments.

They did a very thorough, careful job examining every aspect of the campaign and I so far have found no problem with their conclusions.

Mr. **Gore**. Do you agree with Mr. Finkelstein who testified Tuesday that your goal is 30 percent of the American public using seat belts? Is that the highest level you can expect from your seat belt campaign?

Mr. **Peck**. Oh, no, if Mr. Finkelstein said that I certainly do not agree with it. No. Let me tell you what we discovered as we started to do the research and started——

Mr. **Gore**. No, no. Please.

Mr. **Peck**. No. The answer is no. If that was what Mr. Finkelstein said, no.

Mr. **Gore**. Mr. Finkelstein, your internal documents in NHTSA indicate that 30 percent is the upward range of what you can expect to accomplish with this program——

Mr. **Finkelstein**. No. What I said was that 30 percent was a reasonable target for us to expect that we should be able to accomplish, that we would expect 40 to 50 percent as the likely upper range of what——

Mr. **Gore**. Do you expect 40 to 50 percent?

Mr. **Finkelstein**. I would hope——

Mr. **Gore**. That is not what I asked you.

Mr. **Peck**. Mr. Chairman?

Mr. **Gore**. Excuse me, Mr. Peck.

Mr. **Finkelstein**. We haven't, we have not done the specific kind of research that define what the upper bounds are. If you ask me personally——

Mr. **Gore**. I asked you personally on Tuesday what you expect, and you said you thought——

Mr. **Finkelstein**. I personally said I expected in excess of 30 percent. I thought we could hope for reaching 40 to 50 percent.

Mr. **Peck**. I would expect——

Mr. **Gore**. Let me read you from the transcript:

> Mr. **Finkelstein**. We have not done a major analysis.
>
> Mr. **Gore**. Such analysis as you have done, what figures have you reached?
>
> Mr. **Finkelstein**. Realistically, if we could get to 30 or 40 percent, it would be a very, very successful one.

Mr. **Finkelstein**. Correct.

Mr. **Gore**. Do you agree with that, Mr. Peck?

Mr. **Peck**. Yes, but I would expect that wouldn't be the final level. I would be disappointed if over time it didn't get substantially higher based on the experience in other countries.

Mr. **Gore**. Well, if this is your No. 2 and 3 priority, why haven't you done any research of a major study——

Mr. **Peck**. I am sorry. Excuse me. That was not either my or I hope Mr. Finkelstein's testimony. What we have discovered is, it is impossible to predict——

Mr. **Gore**. Major analysis. We have not done a major analysis of it.

Mr. **Finkelstein**. To determine what the upper bound would have been. We are doing major analyses to try to determine specifically what programs we should go ahead with.

Mr. **Gore**. But you have done a thorough analysis of the program of the seat belt program?

Mr. **Peck**. Yes, we have indeed, and the reason——

Mr. **Gore**. Could you provide that to the subcommittee?

Mr. **Peck**. Oh, sure. We have provided it to just about everybody. I would be glad to, yes.

[The information follows:]

Technical Report Documentation Page

1. Report No. DOT-HS-806-142	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Effectiveness and Efficiency of Safety Belt and Child Restraint Usage Programs		5. Report Date March 1982 6. Performing Organization Code NTS-40
7. Author's Dr. James L. Nichols		8. Performing Organization Report No.
9. Performing Organization Name and Address Office of Program and Demonstration Evaluation Traffic Safety Programs National Highway Traffic Safety Administration U.S. Department of Transportation, Wash., DC 20590		10. Work Unit No. (TRAIS) 11. Contract or Grant No.
12. Sponsoring Agency Name and Address Same		13. Type of Report and Period Covered Problem and Countermeasure Review: 1966-1981 14. Sponsoring Agency Code NTS-40

15. Supplementary Notes

16. Abstract

Problem: Each year, approximately 34,000 persons are killed and 520,000 receive moderate to severe injuries as occupants of passenger cars, light trucks and vans. Approximately half of these deaths and injuries could be avoided if all such occupants wore safety belts and used child safety seats for their young children. Unfortunately, fewer than 12 percent of all drivers and even fewer passengers are observed to use their safety belts. Approximately 20 percent of children under age 5 have been observed to be in a safety restraint.
Methods for Increasing Usage: The primary methods for increasing safety belt and child restraint usage are: (1) public information (mass media) programs; (2) education programs; (3) incentive programs; (4)organizational policies requiring belt use while on official business; and (5) safety belt and child restraint usage legislation. A review of such programs has suggested that combined public information, education, incentive and use requirement policy programs could substantially increase the usage rates among specific target groups, at the community level, at the State level or at the national level. However, such programs must be implemented in a comprehensive fashion (reaching many persons) over a substantial period of time. Incentive programs offer significant potential for increasing the impact of the other approaches. Unfortunately, incentive programs have been used infrequently in the past. Foreign legislation efforts have resulted in 50 percent increases in usage rates and 15-20 percent reductions in death and injury. Prior to such legislation, many of these nations have achieved usage rates in the 25-40 percent range by means of voluntary methods, limited primarily to mass media programs. In the United States, a savings of 4,400 lives and an avoidance of 87,000 moderate to critical injuries could be achieved with only a 35 percent usage rate, well within the range achieved in some nations.
Suggested Approaches: A review of past studies designed to determine the reasons for low belt usage and of possible approaches for countering such reasons suggests the following considerations to be included in any future efforts to increase safety belt and child restraint usage in the Untied States: (1) many other groups and organizations have to be involved in the program; (2) automobile deaths and injuries must be viewed as a public health problem; (3) current interest in child restraints should be capitalized on; (4) the economic costs of belt non-use must be better documented; (5) more emphasis on incentive programs should be encouraged; (6) comprehensive, multi-faceted programs should be implemented by "networks"of organizations; (7) many different target groups must be addressed; and (8) a program based on voluntary usage is most appropriate at the present time. Such a program is presently being developed by the NHTSA.

17. Key Words afety belt, seat belt, child restraints, occupant restraints, restraints, and belt usage.	18. Distribution Statement Distribution available to the U.S. Public through the Nat'l Technical Information Service, Springfield, VA 22161.

19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 113	22. Price

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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*1 in ≡ 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.

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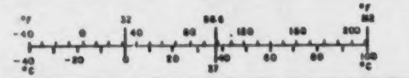
Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



Executive Summary

The Problem

Each year approximately 34,000 persons are killed and 520,000 persons receive moderate to severe injuries as occupants of passenger cars, light trucks, and vans.

These deaths and injuries result when vehicle occupants are smashed against the vehicle's interior or are ejected from the car and either crushed by it or impact against obstacles outside the vehicle. This is what is known as the "second collision" as opposed to the "first collision", when their car hits some obstacle such as another car, a tree, an embankment, etc.

There is unequivocal evidence that safety belts and child restraints could prevent about half of all such deaths and injuries if all occupants would only use them. Unfortunately an average of less than 12 percent of vehicle drivers and even fewer passengers are observed to be using their belts at any one time.

Methods for Increasing Usage

A. Public Information (Mass Media Programs)

Mass media programs, used alone, are unlikely to raise usage rates substantially although some (e.g., in Great Britian) have achieved usage rates of approximately 35 percent. The Great Britain example represented an increase of nearly 200 percent above a baseline of 12 percent usage in 1971.

In the U.S. no concerted mass media campaigns have been conducted over a long period of time. One local program raised usage rates from 17.5 percent to 20.8 percent (among drivers), an increase of 19 percent (or 3.3 percentage points). Another raised overall usage rates from 12.4 percent to 16.8 percent, an increase of 35 percent (or 4.4 percentage points). A third and a fourth failed to significantly raise usage rates.

Most mass media campaigns have resulted in measured increases in knowledge about belt usage and positive attitudes toward belt usage. In foreign nations, mass media campaigns have greatly facilitated the passage of safety belt usage legislation.

B. Education Programs

Educational programs for specific target groups have more potential for raising usage rates among specific groups but are constrained by the fact that each program reaches many fewer persons than does a mass media program. Thus, comprehensive "networking" approaches will be required if educational programs can ever have a national impact.

One survey found that students of driver education use their belts 160 percent more frequently (usage rate = 26 percent) than do persons who taught themselves to drive (usage rate = 10 percent). Some of this difference is likely due to more safety conscious persons opting for driver education in the first place. However, one study of educational programs showed a 157 percent increase in safety belt usage from a very low level (i.e., from 3.3 percent to 8.5 percent). Another approach resulted in a 49 percent increase from a higher baseline rate (i.e., from 13.5 percent to 26.7 percent).

In the child restraint area, child restraint usage rates have been increased by 60 percent (i.e., from 26 percent to 41 percent; or 15 percentage points) and by 72 percent (to a high of approximately 62 percent) in two separate programs. However, there were complicating factors of improper usage, decreased differences in usage between experimental and control groups over time, etc.

Loaner programs in some States (e.g., Iowa) have been able to increase usage by nearly 200 percent from 10 percent to 29 percent (an increase of 19 percentage points). Overall, usage of child restraints has increased substantially over the past 2 years. Much of this increase is throught to be due to combined education and child seat loaner programs.

In the safety belt area, educational programs can result in usage rates (among specific target groups) in the 30-40 percent range. In the child restraint area, usage rates of 40-50 percent (or higher) can be achieved among specific target groups, if accompanied by loaner, rental, or discount sales programs. Educational program have greater potential when they are accompanied by incentives for belt use.

C. Incentive Programs

Incentive programs are perhaps the most underused, yet potentially most powerful of all voluntary usage approaches. Using a combination of mass media, education and incentive programs, the Swedish government was able to raise usage rates by as much as 100 percent on city streets (i.e., from 12 percent to 25 percent) and by as much as 60 percent on rural roads (i.e., from 37 percent to nearly 60 percent).

In the U.S., one company, using a combination of a use requirement policy, educational programs and incentives, raised usage rates from 50 percent to 90 percent. In another program, usage rates were increased from 18 percent to 57 percent during the incentive period (an increase of 216 percent or 39 percentage points).

Incentive programs, like other measures, are not most effective when used alone. However, they provide considerable additional potential for mass media, education, employer belt use policies and legislation programs.

D. Belt Use Policy Programs

Organizational and company policies which require belt usage while on the job or while in company vehicles offer powerful approaches for increasing belt usage among various segments of the population. Getting large numbers of employers motivated to implement such policies is not a simple task. Nor should such policies be implemented in absence of education, incentive and enforcement efforts.

Some programs such as those by DuPont, Northwestern Bell, Dow Chemical, the Air Force, and the State of Iowa have been able to achieve usage rates from 60-90 percent while on company property. Even with less intense programs, usage rates between 50 and 60 percent have been achieved. Belt use off the job is also increased and appears to range from 30-40 percent with less intense programs to as high as 50-60 percent with the more intense programs. Many of these rates are not well documented by observational surveys however.

E. Legislation

Foreign laws requiring belt use have provided powerful evidence for increasing safety belt usage. Usage rates of 70-90 percent have frequently been reported as a result of publicized, enforced usage laws, especially when they have been accompanied by education and incentive programs. In the United States, however, this is a matter of State choice. Furthermore, concerns for individual freedom are much more prominent in this country.

In the area of child restraints, usage rate increases resulting from legislation have been somewhat smaller. However, it does appear that child restraint legislation is more viable among the States, as more than 10 States have already passed some form of child restraint legislation.

Effectiveness of a Fully Implemented Voluntary Usage Program

For each one percent increase in usage on a national basis, NHTSA currently estimates over 180 lives would be saved per year. A savings of 4,400 lives and avoidance of 87,000 moderate to critical injuries could be achieved with only a 35 percent usage rate, well within the range of voluntary usage achieved in other nations.

I. Problem Statement

The problem addressed in the safety belt and child restraint area is twofold, consisting of: (1) death and injury to occupants of passenger vehicles as a result of crashes, and (2) failure of adults to wear safety belts or to use child restraints for infants and young children (under age five).

A. Total Passenger Deaths and Injuries

Relative to death and injury to occupants of automobiles, Table 1 shows the number of occupants killed or injured in 1979. These figures are from the National Center for Statistics and Analysis using data from the Fatal Accident Reporting System and estimates of injuries derived from the National Accident Sampling System for 1979. These data refer to moderate-to-serious non-fatal injuries (AIS 2-5).

Table 1
Fatalities and AIS 2-5 Injuries for Occupants of Passenger Cars and Light Trucks in 1979

	Fatalities	AIS 2-5 Injuries
Passenger Cars	27,799	430,000
Light Trucks (> 10,000 lbs GVWR)	6,453	90,000
Total	34,252	520,000

Source: Fatal Accident Reporting System and National Accident Sampling System.

As Table 1 indicates, nearly 28,000 fatalities and approximately 430,000 moderate to serious injuries occur each year to passenger car occupants. The number of fatalities to occupants of light trucks and vans is about 6,500 and the number of moderate-to-serious injuries to occupants of light trucks and vans is about 90,000.

B. Child Passenger Deaths and Injuries

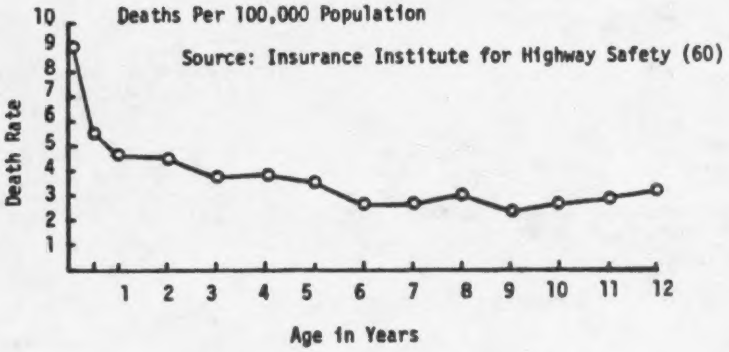
Table 2 shows child (age 4 and under) occupant fatalities for passenger cars and light trucks and vans over the 6 years from 1975 through 1980. About 185 children under age 1 year and about 510 children 1-4 years of age are killed each year in such vehicles. Fatalities for the 1-4 age group dropped 5 percent below the average in 1980.

Table 2
Child Fatalities as Occupants of
Passenger Cars and Light Trucks and Vans.

	AGE	
Year	Less Than 1 Year Old	1-4 Year Old
1975	191	515
1976	172	506
1977	192	521
1978	194	516
1979	173	512
1980	189	482
Average	185	509

Source: Fatal Accident Reporting System

Infants riding as motor vehicle occupants have an extremely high death rate (deaths per 100,000 population) as compared with older children. In a study conducted for the Insurance Institute for Highway Safety (60), one researcher found that the occupant death rate for infants under age 6 months is three times as great as the rate for children aged 6-12 years. Figure 1 shows this relationship.



Deaths Per 100,000 Population

Source: Insurance Institute for Highway Safety (60)

Figure 1
Vehicle Occupant Death Rates for Children

The high death rate for infants is thought to be partially due to a greater likelihood of infants being in the front seat and/or held in someone's arms. Children traveling on adults' laps (especially in front seating positions) are much more susceptible to being seriously injured or killed by being crushed between the adults and unyielding interior structures (60).

C. Low Usage Rates

A second major problem is one of low safety belt and child restraint usage. As this will be covered in a later section, suffice it to say that at present, fewer than 12 percent of the drivers of passenger vehicles wear their safety belts, and only about 20 percent of young children under the age of five years are protected by an acceptable child restraint device (99, 100).

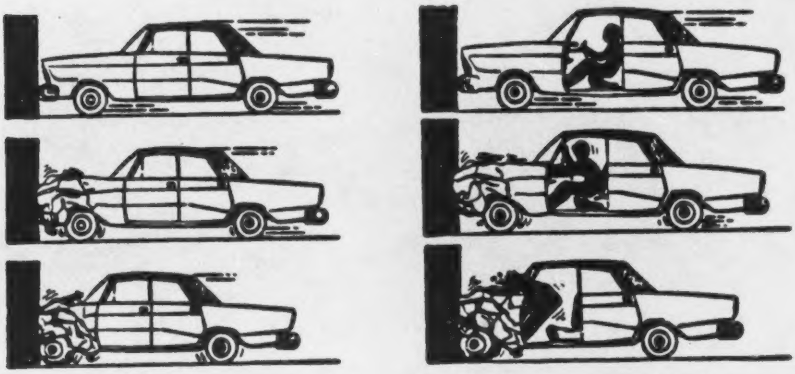
Again if all vehicle passengers wore their belts (or were protected by a child safety seat), it is estimated that about half of the fatalities and injuries which are presently incurred by passengers of automobiles, and vans and light trucks could be prevented.

II. How Safety Belts and Child Restraints Work

A. What Happens in a Collision?

Every motor vehicle accident involves two collisions. The first involves the vehicle: it crashes into something. The second involves the occupants: they crash into the vehicle's interior. In the first collision, property may be damaged, sometimes severely, but generally it can be replaced. However, humans are injured or killed in the second collision. Limbs, organs, or people cannot be replaced. It is the second collision, the human collision, that causes passenger deaths and injuries (59). Figure 2 illustrates these two collisions.

Source: Ontario Ministry of Transport (59)



2A. The First Collision: (The Car's Collision)

2B. The Second Collision: (The Human Collision)

Figure 2
What Happens in a Collision:
The Cars Collision Versus the Human Collision

If the second (human) collision goes unmanaged, the body areas most frequently and most severely injured are: (a) the head; (b) the chest; and (c) the abdomen. The principal injury-producing objects include: (a) the exterior of the car and the outside environment; (b) the steering wheel (including the hub); (c) the windshield and frame; (d) the instrument panel; (e) the door frame and glass; and (f) the roof. These danger areas are illustrated in Figure 3 (59).

Source: Ontario Ministry of Transport (59)

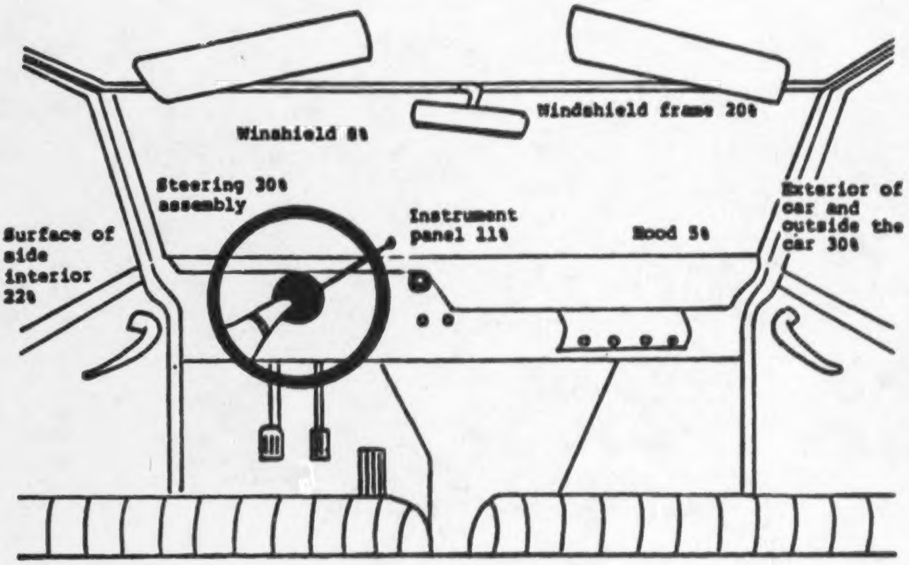

Windshield frame 20%
Winshield 8%
Steering 30% assembly
Instrument panel 11%
Hood 5%
Exterior of car and outside the car 30%
Surface of side interior 22%

Figure 3
Primary Injury Producing Impact Areas

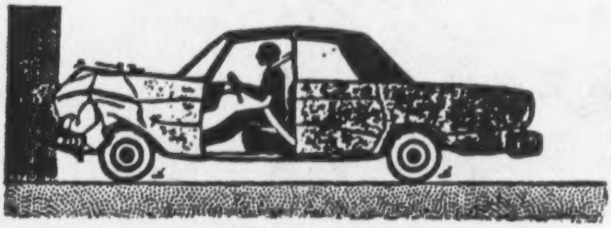
B. What Safety Belts Do

The aim of safety belts is to: (a) take advantage of the crushing effects of the vehicle as it absorbs energy in the first collision; and (b) dissipate the forces of the human collision across time (by the crushing of the vehicle and by the stretching of the belt) and across the surface of the body through a relatively safe medium (the belt) rather than a through dangerous medium (abrupt impact with glass or steel surfaces).

Safety belts prevent or minimize injuries in six ways:

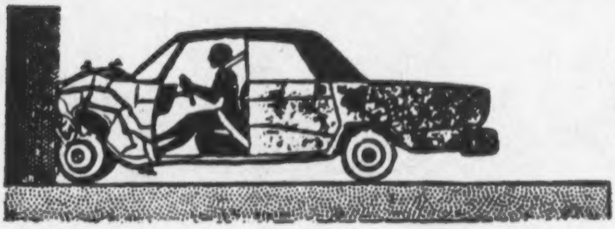
1. There is the "ride down" benefit, in which the belt begins to stop the wearer as the car is stopping.
2. The belt keeps the head and face of the wearer from striking objects like the wheel rim, windshield, interior post, or dashboard.
3. The belt spreads the stopping force across the strong parts of the body.
4. Belts prevent vehicle occupants from colliding with each other.
5. Belts help the driver to maintain vehicle control, thus decreasing the possibility of an additional collision.
6. Belts prevent the occupant from being ejected.

The ability of safety belts to minimize the effects of the human collision is illustrated in Figure 4.



4A. Car Slows

- After Impact,Car Slows
- Front Crushes,Absorbs
- Person Moves Forward
- Belts Tighten,Stretch
- Belts Slow Person Down



4B. Car Stops

- 1/10th Sec.,Car Stops
- Belts Hold Person Back
- Impact Distributed (Across Time and Body)
- No Impact With Dash, Steering Wheel,Windshield

Figure 4
How Safety Belts Work

C. What Child Restraints Are

Infants and toddlers (children less than four years of age) are top heavy and susceptible to head and spinal cord injury. They need to be properly protected in a dynamically "crash-tested" child safety seat. If a child safety seat is not available, children should be secured by a lap belt in the rear seat of the vehicle.

There are different categories or types of child safety seats. Various educational programs may refer to them in slightly different ways. One way of categorizing them is as follows:

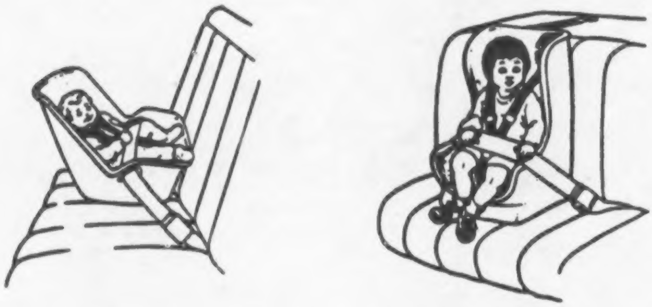
1. **Infant carriers** (Figure 5a)
   - These child safety seats provide maximum head protection by positioning the infant (0-9 months) in a rearward facing semi-reclining position.
2. **Toddler safety seats:** seats with internal belt systems (Figure 5b)
   - This type of child safety seat has an internal strap/belt system to secure the child (9 months to 4 years). The strap/belt system has two shoulder straps, a lap belt, and a crotch belt.
   - Some models sit up high on the vehicle seat and require an additional top tether anchoring strap. The top tether anchoring strap must be attached to the metal structure of the vehicle.
3. **Seats Without Internal Belts** (Figure 5c)
   - This type of child safety seat fits over the front of the child, and is designed to catch and cushion the child in a crash.
   - A protective shield is fastened to the vehicle seat by the safety belt. The safety belt is secured around the front of the shield.
4. **Convertible Safety Seats** (not shown)
   - The term convertible means that this type of safety seat has one position designed to protect the child from infancy to about nine months of age or 20 pounds.
   - A second "toddler" position used for the child between about nine months of age (or 20 pounds) up to about four years of age (or 40 pounds).
5. **Safety Harnesses** (Figure 5d))
   - A safety harness is a double shoulder harness which resembles the belt used inside some toddler seats. (No tested harnesses are on the market as of January 1982).

6. **Booster Seats** (not shown)

   - o A booster seat is merely a firm (dynamically tested) cushion which the child sits on and through which the car safety belt is fastened. These seats are the newest additions to the market. They utilize the rear seat lap belt only.

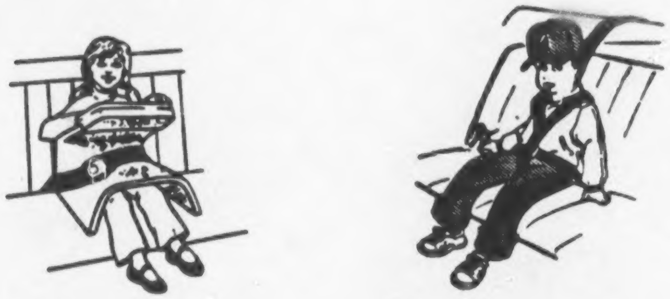
7. **Lap Belts**

   - o When a safety seat is not available the safest place for a child is in the rear seat restrained by a lap belt.



5A. Infant Carrier

5B. Toddler Seat (with harness)



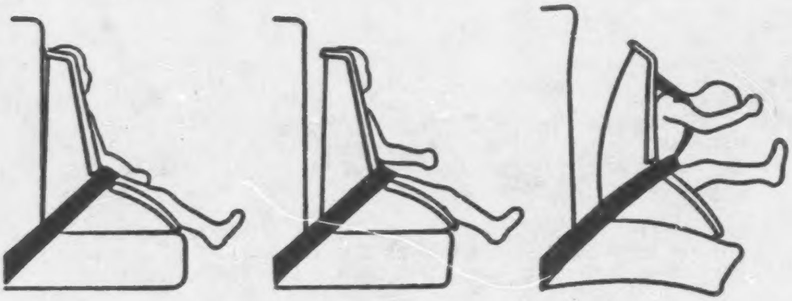
5C. Toddler Shield

5D. Safety Belt Harness

Figure 5
Four Primary Types of Child Safety Seats

D. What Child Restraints Do

Child safety seats work like safety belts, except that they are more effective for young children: (1) they take advantage of the "ride-down" effect; (2) they distribute the impact over time (by the belt stretching); (3) they distribute the forces across a childs body; and (4) they prevent the child from striking the more hostile forces of the car's interior (or other passengers). Figure 6 illustrates how child safety seats work.



6A. Car Contacts 6B. Car Slows 6C. Car Stops

Figure 6
How Child Safety Seats Work

III. Effectiveness of Safety Belts and Child Restraints

A. Safety Belt Effectiveness

Evidence for the effectiveness of safety belts in reducing deaths and injury severity is substantial and unequivocal. Such data come from two primary types of studies: (1) comparisons of the injury and death rates of crash involved belt wearers with those of non-wearers; and (2) studies of changes in the level of occupant injuries and deaths in nations which have experienced rapid increases in belt usage.

1. Comparisons of Crash-Caused Injuries of Belt Wearers Versus Non-wearers

Crash studies which compare the injury rates of belt wearers versus non-wearers are most useful from the standpoint of quantifying the injury-reduction effectiveness of belts when worn. Since these studies compare all injuries of belt wearers with those of non-wearers, they include any injuries which might be caused by the belt (whether due to improper wearing or not). A chronological summary of the findings of several of these studies follows:

- A 1961 study by Huelke (58) investigated 139 accidents involving 177 fatalities. This study indicated that 40 percent of the persons killed in auto crashes could be saved by wearing lap belts and that another 13 percent could be saved by wearing shoulder belts.

- A 1967 study by Bohlin (12) is perhaps one of the largest and most widely known studies of safety belt effectiveness. In this study the value of a three point safety belt system was evaluated by means of a statistical analysis of more than 28,000 accident cases in which 37,511 unbelted and belted front-seat occupants were involved. The results of the study indicated that the average injury reducing effect of the lap and shoulder belt was between 40 percent and 90 percent depending on accident speed and type of injury. (Non-belted occupants substained fatal injuries throughout the entire speed scale, whereas none of the belted occupants were fatally injured at accident speeds below 60 mph).

- A 1969 study by Kihlberg (66) investigated both injury and non-injury crashes in rural Utah. Comparing similar crashes, unbelted occupants were injured significantly more frequently and more severely than lap belted occupants. Kihlberg's conclusion was that lap belts reduced the risk of being injured by 29 percent, the risk of being more seriously injured by 41 percent, and the risk of being severely or fatally injured by 50 percent.

- A 1971 study by Levine and Campbell (68) investigated police reported crashes occurring in North Carolina in 1966 and 1968 where there was personal injury or property damage in excess of $100. The results of the study indicated that lap belts were 43 percent effective in reducing the number of serious injuries or fatalities to the drivers in these crashes.

- Finally, a 1976 study for the NHTSA by Reinfurt, Silva, and Seila (110) investigated 15,000 1973-75 model cars involved in towaway accidents. This study included 10,758 observations of drivers and right-front-seat occupants in five States. The study indicated that the lap belt reduced these front seat occupants' chances of suffering an injury (AIS 2 or greater) by 31 percent. It was estimated that the lap/shoulder combination reduced this level of injury by 57 percent.

A summary of the results of these studies is provided in Table 3. Figures in the left column are for the effectiveness of belts in reducing non-fatal injuries. Those in the right column represent fatality reduction effectiveness. Those figures between the two columns represent combined death and injury reduction estimates. It is interesting to note that, with the exception of the Swedish study by Bohlin (which included shoulder belts), the effectiveness estimates of earlier studies are less then of the 1976 study by Reinfurt, Silva, and Seila (110). Much of this increase in effectiveness is thought to be due to increased usage of lap and shoulder belt systems.

Table 3
A Summary of Belt Effectiveness Study Results
(1961-1976)

Year	Author	Effect (Injuries)		Effect (Deaths)
1961	Huelke (90)			40-53%
1967	Bohlin (52)	40-90%		
1969	Kihlberg (102)	30-40%		50%
1971	Levine & Campbell		(43%)	
1976	Reinfurt, Silva, & Seila (30)		(57%)	

Source: Reinfurt et al. (110).

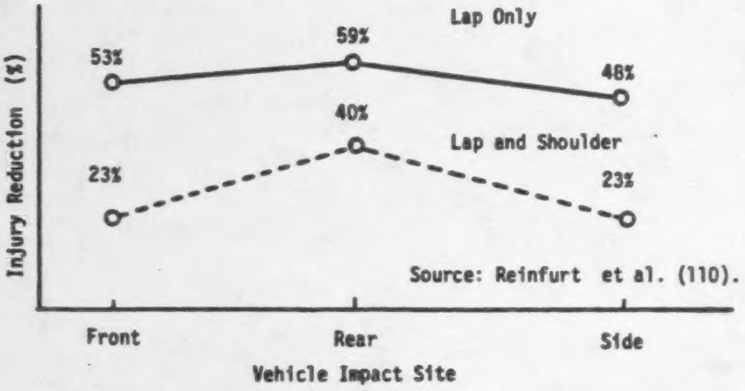
The results of the 1976 study (110) are summarized according to injury severity in Table 4.

Table 4
The Injury Reduction Effectiveness of Lap and Shoulder Belt Versus Lap Belts Only

AIS Injury Level		Effectiveness (%) Lap Belt	Lap and Shoulder Belt
1.	Minor	.15	.30
2.	Moderate	.22	.57
3.	Severe	.30	.59
4-6.	Fatal	.40	.60

Source: Reinfurt et al. (110).

Interestingly enough the Reinfurt et al. study (110) also found the effectiveness of safety belts to be as high or higher in side impact crashes as in frontal or rear crashes. This is thought to be due to decreased ejection from the vehicle in side-impact crashes. Figure 7 illustrates this finding.



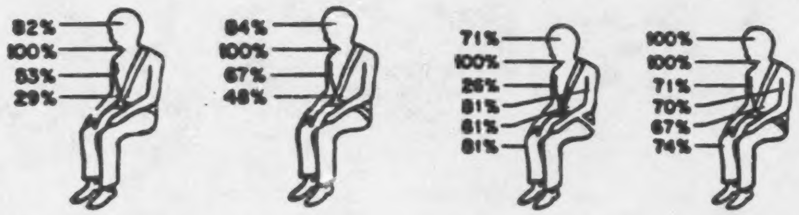
Source: Reinfurt et al. (110).

Figure 7
Overall Injury Reduction Effectiveness of Lap Only and Shoulder Belts in Various Crash Types

In addition, a recent study by Huelke (56), has estimated the effectiveness of lap and shoulder belts in reducing deaths as 77 percent in frontal crashes and 91 percent in rollovers. Figures 8a and 8b show reductions in fatalities and injuries for various body areas.

In the past, the most frequently cited NHTSA estimates of the effectiveness of safety belt systems have been based on the results of the Reinfurt et al. study (110). More recently, however, NHTSA reports (89a, 89b, 89c) have cited data from the National Crash Severity Study (NCSS). These studies estimate the effectiveness of safety belts in reducing fatalities as 50 percent and the effectiveness in reducing injuries (AIS 2-5) as 65 percent. Another NHTSA study (145a) estimates effectives as 49 percent for fatalities and 53 percent for more severe injuries (AIS 3-5). Many additional studies have been conducted (15, 19, 23, 61, 68, 80, 82, and 90).

Source: Huelke (56).



Frontal Crashes   Rollovers   Frontal Crashes   Rollovers

8A. Fatality Reduction

8B. Serious Injury Reduction

Figure 8a and 8b
Effect of Safety Belts in Reducing Fatalities and Injuries

2. Effect Of Increased Belt Usage on Foreign Injury and Fatality Death Rates

From a real world stand point, some of the most empirical data concerning the effectiveness of safety belts has come from studies which have investigated actual changes in death and injury rates in nations which have substantially increased safety belt usage. These data come from countries which have passed mandatory safety belt usage laws.

The results of such studies will be reviewed more completely in the section of this paper dealing with safety belt legislation. However, it is important at this point to summarize the findings of such studies. Several nations have obtained usage rates of 70 percent or greater. While some have reported reductions in death and injury as high as 40-50 percent, most verified reductions have been in the 15-30 percent range depending on which crashes (and occupants) are being investigated (7, 8, 71, 103, 114, 163). These findings take into account the fact that early converts to belt usage may have slightly lower crash risk probabilities than do those who are among the last to begin using safety belts (24, 71, 114).

3. Summary of Findings Concerning the Effectiveness of Safety Belts.

The results of safety belt usage effectiveness studies have been not only dramatic but consistent as well. So much so, in fact, that a recent Canadian report on the subject of safety belts (129) stated:

> The question of whether seat belt assemblies are effective in attenuating injuries has been the object of intense scrutiny through controlled investigations both inside and outside the laboratory. With virtually no exceptions, the results of such studies have been unanimous in their declaration--seat belts provide an effective mechanism for reducing injuries to motor vehicle occupants. In view of the consistency of these findings, coupled with the apparent concern of the motoring public for road safety, as well as for the preservation of their health, it is somewhat paradoxical, if not bewildering to many road safety officials, that people so often choose not to take advantage of seat belts as potential life-support systems.

In terms of the U.S. crash problem, about 17,000 fatalities and 320,000 moderate-to-severe (AIS 2-5) occupant injuries could be prevented each year if safety belts were worn by all vehicle occupants. These estimates are based on the more recent effectiveness estimates of 50 percent for fatalities and 65 percent for injuries (AIS 2-5).

B. Effectiveness of Child Restraint Devices

The effectiveness estimates for child restraint devices are somewhat more varied than those for safety belts. One study of crashes conducted in the State of Washington (121, 122) estimated the effectiveness of such devices at 90 percent in reducing deaths and 67 percent in reducing disabling injuries. A Michigan report (94) estimated the injury reduction effectiveness at 36 percent and a study by the Center for Environment and Man (16) estimated the effectiveness of child restraints in reducing deaths and injury as ranging between 30-41 percent depending on whether minor injuries are included (30 percent effectiveness) or omitted (41 percent effectiveness).

Results from the State of Tennessee's evaluation of their child passenger safety law (shown in Table 5) indicate that the effectiveness of child restraints in reducing major injury is between 46-71 percent (105). It should be noted that in both the Michigan (94) and Tennessee (105) studies there were 19-20 infant fatalities, all of which occurred to unrestrained children.

Table 5
A Comparison of Injuries Sustained by Restrained and Unrestrained Children in the State Tennessee

	% Sustaining Injuries Minor	 Major
1978		
Restrained	25.9%	4.5%
Unrestrained	38.0%	8.3%
1979		
Restrained	29.0%	5.5%
Unrestrained	43.1%	19.0%

Source: Perry et al. (105)

Thus, real world estimates of the effectiveness of child safety seats range from 30-90 percent, depending on the type of study and the level of injury. Many of such studies have not controlled for improperly used child restraints (which of course, lowers estimates of effectiveness). Existing data along with laboratory evidence suggest that effectiveness estimates of 50-60 percent for properly used child restraints would be very realistic. In general, effectiveness appears to increase for more severe injuries and fatalities.

C. The 1976 Highway Safety Needs Study

The 1976 Highway Safety Needs study (88) transmitted to the Congress by the U.S. Department of Transportation suggested that of 37 highway crash countermeasures listed, safety belts ranked first relative to the potential for preventing death and injuries over the next decade. This study estimated that safety belts (at an 80 percent usage rate) could prevent 89,000 deaths and 3 million serious injuries over a ten year period. Safety belts were identified as the countermeasure superior to all other countermeasures. It is this kind of evidence which led one State highway safety official to state in a docket submission that "if there is a silver bullet in traffic safety, that (safety belt usage) is it" (67).

D. Constraints to Safety Belts and Child Restraints as Effective Countermeasures: Low Usage Rates

1. Background

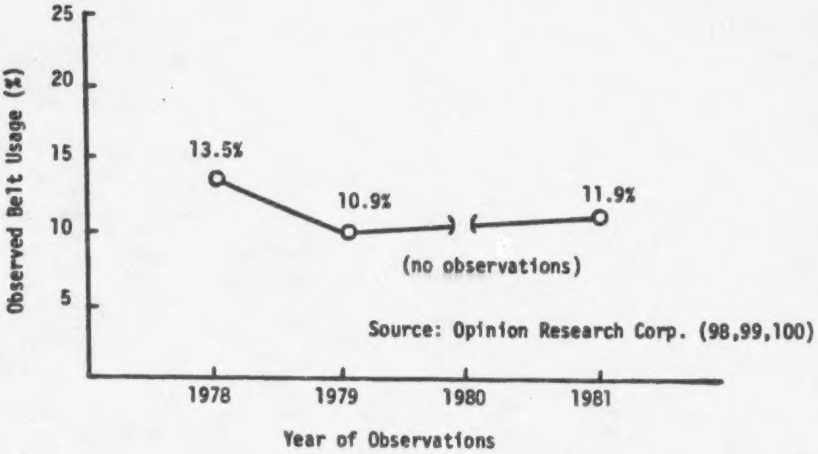
The greatest constraints to safety belts (and child restraints) as effective highway safety countermeasures are the existing low usage rates. Either device is only effective when it is used and acceptably high usage rates have not been attained in the United States. A listing of major Federal efforts related to the use of safety belts and child restraints is as follows:

- 1966 Lap belts required in passenger vehicles.
- 1968 Lap and shoulder belts required in passenger vehicles.
- 1973 Congress established incentive program for States to enact mandatory usage laws.
- 1974 National Conference on Safety Belt Usage is held. Mandatory usage laws are endorsed.
- 1974 Interlock systems required on all new passenger vehicles.
- 1974 Congress repeals interlock rule and withdraws incentive program.
- 1978 Congress requires States to allocate 2 percent of highway safety funds to safety belt usage.
- 1978 Testing of child restraint devices required.
- 1979 Series of child restraint and occupant restraint workshops initiated by NHTSA.
- 1979 National Conference on Child Passenger Protection held.
- 1980 NHTSA initiates second series of workshops designed to increase occupant restraint usage.
- 1981 NHTSA establishes Task Force to plan and implements comprehensive program to increase safety belt and child restraint usage.

The most significant impact of any prior U.S. effort, relative to increased usage of safety belts, resulted from the 1973 interlock rule which was followed by usage rates as high as 74 percent in 1974 model vehicles. Even though such usage rates (in 1974 model cars) dropped to 43 percent by mid-1975, a national belt usage rate of approximately 25 percent was attained during this period of time. Following the negative public reaction and the 1974 repeal of the interlock rule, usage rates have dropped steadily.

2. Current Usage Rates

The most accurate means for determining usage rates is through systematic observational surveys conducted throughout the nation. The results of such observations conducted for NHTSA by Opinion Research Corporation (98, 99, 100) are shown in Figure 9. Usage rates prior to 1977 can be estimated from studies reviewed in a 1980 report by the University of Michigan Highway Safety Research Institute (143). Basically, these studies suggest that usage rates for drivers and front seat passengers were in the 15-20 percent range, from 1970-72. Such usage peaked at approximately 25 percent in 1974 and has been declining steadily since that time. While current driver usage rates appear to be in the 11-12 percent range, usage rates in some areas (such as the west coast) are considerably higher. For example, the most recent observed usage rates. for drivers in Seattle, Washington were 26 percent.



Source: Opinion Research Corp. (98,99,100)

Figure 9
Estimated National Safety Belt Usage Rates
(For Drivers)

No observational data was obtained for the period from November 1979 to November 1980. What is apparent from the existing data is that up until November of 1979 (and possibly into 1980), belt usage was at a steady decline. The most recent survey results suggest that the decline has stopped and that usage rates may now be on an increase. This would be expected on the basis of at least two factors: (1) increased State activity in the safety belt (and child restraint) area since 1979; and (2) the ever-increasing proportion of down-sized vehicles in the traffic mix.

The increased State activity also results from a combination of additional factors which include: (a) the 1978 Congressional mandate that the States spend a minimum of 2 percent of their highway safety funds on safety belts and child restraints; and (b) the 1979 and 1980-81 series of NHTSA State and Regional Workshops in this area.

The fact that the activity of the States has increased dramatically in the child restraint area is born out by the increased resources allocated to this area since 1978 (less than $1 million in 1978 versus $5 million in 1980). In addition, recent NHTSA surveys have suggested a substantial increase in the proper use of child restraints since 1979. Furthermore, these surveys have shown a doubling of child restraint usage by toddlers (age 1-4). Figure 10 shows the usage rates by age group for 1979. Figure 11 shows the increase in infant and child restraint usage from 1979 to 1981 (98, 99, 100).

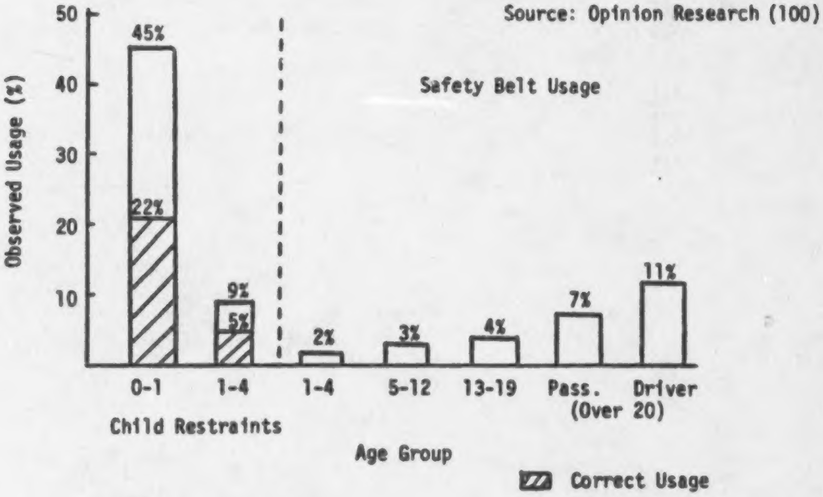
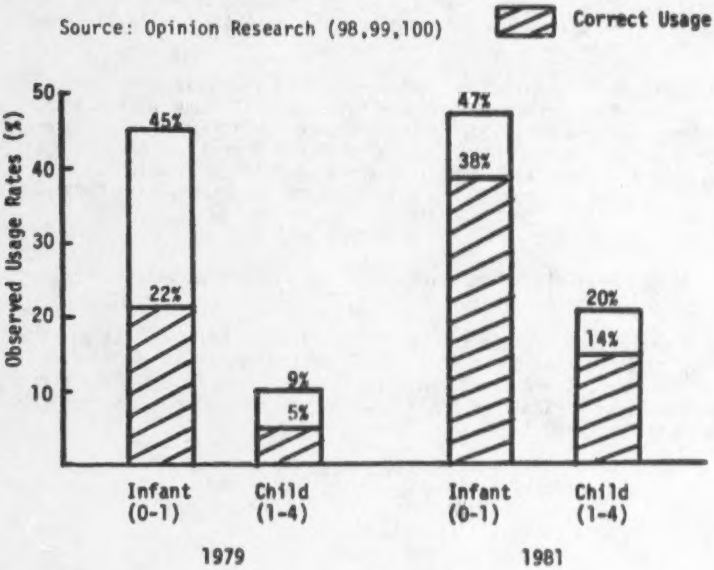

Source: Opinion Research (100)

Figure 10
Restraint System Usage by Age Group



Source: Opinion Research (98,99,100)

Figure 11
Change in Use of Infant and Child Restraint Devices

Thus, it is clear that with: (a) 11 States having passed child restraint legislation and more in the making; (b) an ever-increasing number of child restraint loaner and education programs in existence; and (c) a recent increase in child restraint usage, this is one countermeasure area which is receiving considerable attention by the States. It is interesting to note that many of the higher usage rates have been observed in States which have not yet passed child restraint legislation.

3. Child Restraints

The constraint of low child restraint usage has been nearly as substantial as that of low safety belt usage by adults. As figures 10 and 11 show, child restraint usage for infants (age 0-1 year) is reasonably high (nearly 50 percent) but involves considerable incorrect usage. After age 1, usage drops off dramatically with only about 20 percent of children age 1-5 being restrained. Again, incorrect restraint usage (although reduced substantially in recent years) remains a major problem.

Incorrect usage, next to non-usage, is perhaps the second most formidable obstacle to the effectiveness of child safety seats in reducing death and injury. Other constraints, such as the misconceived notion that a child is safe in a mother's arms, (or in an untested child seat); a general lack of information about the need for child safety seats; and the costs of a child restraint provide some of the major reasons why usage rates have not been higher.

4. Motivational Research Findings Concerning Safety Belt Usage and Non-Usage

In order to get a feel for how the public feels about safety belts and the reasons why people do and don't wear belts, it's necessary to look at the motivational research which includes both telephone and face-to-face surveys. Some of the most significant of those studies which have been conducted in the past decade include:

- 1971 National Analysts (85)
- 1973 Fhaner and Hane (33, 34)
- 1976 Yankelovich, Skelly and White (162)
- 1977 Market Opinion Research (78)
- 1981 Tarrance and Associates (134)

For the purposes of this paper, it seems appropriate to concentrate on the most recent surveys which are the 1977 Market Opinion Research Survey conducted for General Motors (78) and the 1981 Tarrance and Associates Survey conducted for the NHTSA (134).

a. Proportions of user types.

The 1977 study by Market Opinion Research (MOR), involved a national probability sample of approximately 1500 face-to-face interviews (78). It found the following distribution of belt user and nonuser types:

o Confirmed users	(18 percent)
o Moderate users	(28 percent)
o Nonusers	(51 percent)

The MOR research suggested that primary inroads might be made by concentrating on the moderate user since a belt-use habit has already been partially established. The study suggested that most of the 28 percent of moderate users could be converted to confirmed users by a successful program and that as many as 10 percent of current nonusers (or infrequent users) could be converted to moderate-user status. An upper limit usage rate projection of 46 percent (reported frequent use) was suggested by the study.

The 1981 study by Tarrance and Associates (134) involved a national probability sample of 1200 telephone interviews. It found the following distribution of user types:

o	frequent users	(22 percent)
o	sometimes users	(38 percent)
o	infrequent users	(40 percent)

These researchers broke the population down further into the following subgroups, based on responses to key questions concerning their usage rates and their attitudes towards belt use:

o	Frequent users (confirmed)	(22 percent)
- - -	- - - - - - - - - -	- - - - - -
o	Sometimes users (likely to change)	(26 percent)
o	Infrequent users (likely to change)	(22 percent)
- - -	- - - - - - - - - -	- - - - - -
o	Sometimes users (unlikely to change)	(12 percent)
o	Infrequent users (unlikely to change)	(18 percent)

Like the MOR researchers, the Tarrance group suggested that most progress could be made by concentrating program efforts on the "infrequent" and "sometimes" users who are likely to change. Further, these researchers suggested that Americans are not strongly polarized on the issue of belt usage. The failure to wear safety belts was generally not found to be a well thought out, cognitively justified behavior pattern.

The Tarrance researchers also found that the American public feels strongly that the driver is responsible for the safety of passengers in his or her car. Most respondents (89 percent) indicated that they would fasten their belts if asked to do so by the driver.

This closely parallels the findings of the MOR study where driver authority, driver responsibility and driver-to-passenger interactions, were found to be most powerful factors in increasing the belt use of both the passenger and the driver.

Both studies also suggested that Americans would fasten their safety belts if there were economic incentives to do so. In the Tarrance study, 84 percent of those interviewed said they would wear their belts if there was a reduction in their insurance premium for doing so. The MOR researchers also suggested that insurance rate reductions would be powerful incentives for safety belt usage.

The MOR study also found that there were three important events when people generally experienced greater safety belt usage behavior. They were:

- during adverse weather conditions;
- after buying a new car; and
- after formal driver training.

Finally, the MOR researchers conducted both factor and path analyses and developed models for increased safety belt usage. In addition to the upper limit estimate of 46 percent (reported frequent) usage which has already been mentioned, the study provided estimates of the effectiveness of successfully addressing each of several factors concerning safety belt usage. These estimates are shown in Table 6.

Table 6
Estimates of the Effectiveness of Addressing Various Factors in a Safety Belt Usage Program

	Factor	Percent of Drivers Becoming Confirmed Users
(1)	Establish belt use at start of trip (e.g., fasten belt as part of start-up procedure).	5.9%
(2)	Reinforce drivers as responsible and in authority to request safety belt usage.	5.3%
(3)	Increase positive attitudes toward necessity of safety belt usage to be a safe driver.	4.5%
(4)	Decrease fear of entrapment	1.4%
(5)	Alleviate perceptions of discomfort and inconvenience.	1.4%
	Total	18.0%

Source: Market Opinion Research (78)

To the factors listed in Table 6, the MOR researchers further suggested that (a) fully developed belt use modules in driver education courses and (b) the downsizing of new vehicles would add to the above "conversion" estimates.

b. Correlates of Belt Use

All of the motivational studies listed at the beginning of this section have identified characteristics which are associated with user groups and with usage. Below is a summary of the most frequently found correlates of belt usage:

- higher education
- long trips/highway driving
- driver education
- smaller vehicles
- health concern
- purchase of new car
- comfortable/convenient belt system
- West Coast driving
- Metropolitan area
- Women (NHTSA Surveys)

Generally, demographics have been found to predict little safety belt usage (78). However, some of the above characterics and/or conditions can likely be capitalized upon in order to increase safety belt usage among similar (and different) populations.

c. **Reasons given for not wearing belts**

Throughout the past decade of motivational research, (11, 14, 33, 34, 50, 54, 63, 78, 85, 134, 162) the most frequently cited reasons for the nonuse of belts include:

- inconvenience
- discomfort
- laziness
- fear of entrapment
- forgetfulness

Most practitioners in this area feel that while the above are the most often cited reasons given for nonuse, they may also be excuses. Other factors which are thought to be involved include:

- perceived low probability of crash involvement.
- lack of understanding of what really happens in a crash and how belts can help.
- not a habit established early in life.

The two recent motivational studies found similar reasons given for not using safety belts. The MOR study went further and factor-analyzed the reasons given for belt nonuse (or use). The most important factor which came out of this study (and accounted for 43 percent of the belt-use variance) was labeled "safety belt affect" (attitude). This factor consisted of a group of feelings and attitudes towards belts ranging from persons who felt that "it was an excellent habit to wear safety belts" and "using safety belts indicates good judgment" to persons who felt that "belts aren't worth it" and "with padding and other safety features there is no need for belts." The actual factor loadings for the major statements which contributed to this attitudinal factor were as follows:

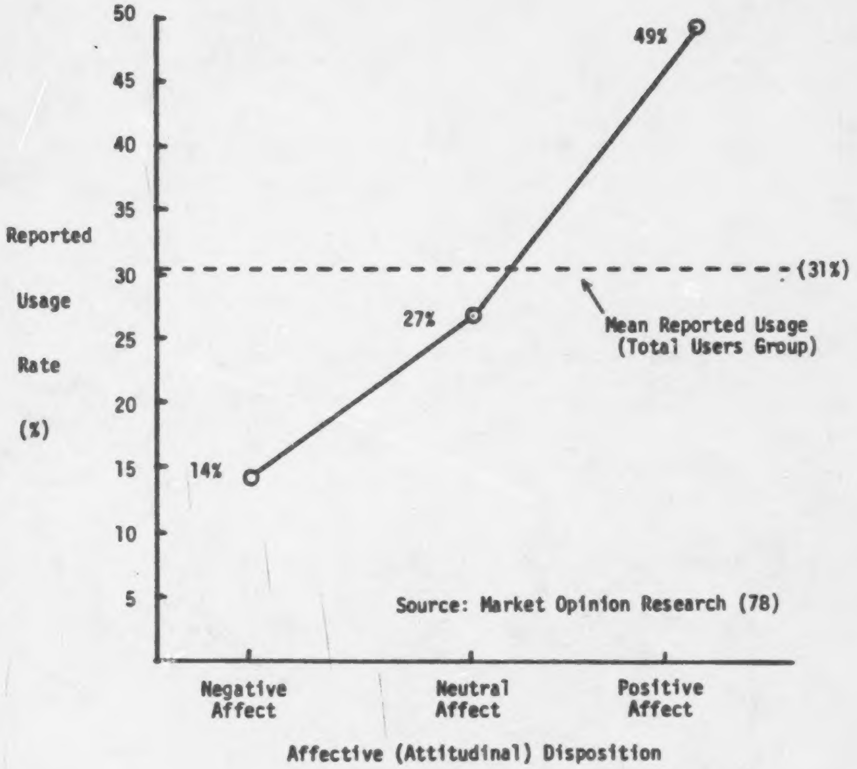
	STATEMENT	FACTOR/LOADING
o	excellent habit to wear belts	+.81
o	using belts indicates good judgment	+.80
o	using belts prevent injuries	+.73
o	driving feels more secure with belts on	+.73
o	belts aren't worth it (low probability of crash)	-.70
o	no need for belt with other safety features	-.67
o	rather not think about belts.	-.64

About 30 percent of the respondents held negative attitudes towards safety belts. As expected, 75 percent of such negative attitudes were held by nonusers. Table 7 shows the distribution of attitudinal dimensions for each user group. Figure 12 shows the relationship between such attitudes and safety belt usage for the total respondent group.

Table 7
Attitudinal Dimensions by User Group

Attitude	Base	Confirmed Users	Moderate Users	Non-Users	Missing Data
Positive	(562) 100%	32%	33%	31%	4%
Neutral	(622) 100%	12%	34%	51%	3%
Negative	(482) 100%	9%	15%	75%	1%

Source: Market Opinion Research (78)



Source: Market Opinion Research (78)

Figure 12
Reported Safety Belt Use As A Function of Belt Use Attitude.

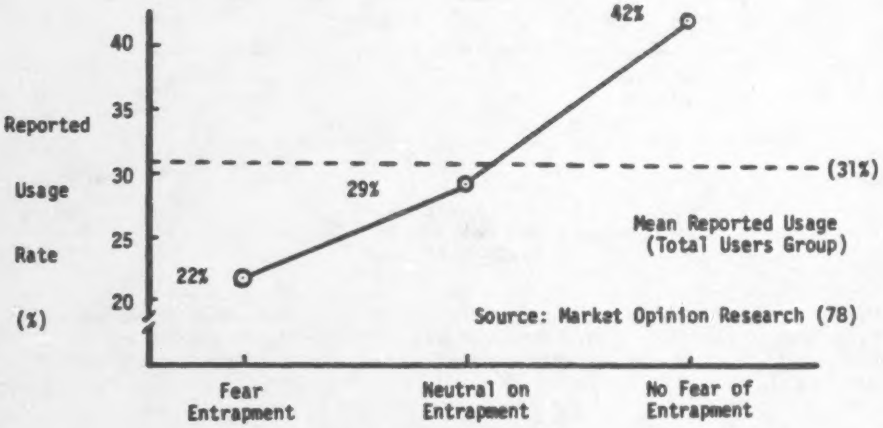
Nearly all safety belt usage motivational studies have found fear of entrapment to be a major reason given for nonuse of belts. Among the many myths and misconceptions about safety belts and their effect, fear of entrapment stands out from the rest.

Again the MOR study found this attitude most frequently held by nonusers. Table 8 shows the distribution of this fear of entrapment attitude across the various user types. Figure 13 shows the relationship between reported usage and fear of entrapment.

Table 8
Fear of Entrapment by Use Groups

Attitude		Base	Confirmed Users	Moderate Users	Non-Users	Missing Data
Do not fear entrapment	420	(100%)	27%	29%	41%	3%
Neutral on entrapment	648	(100%)	18%	30%	50%	2%
Fear entrapment	599	(100%)	12%	26%	59%	3%
Total Mean	1,667	(100%)	18%	28%	51%	3%

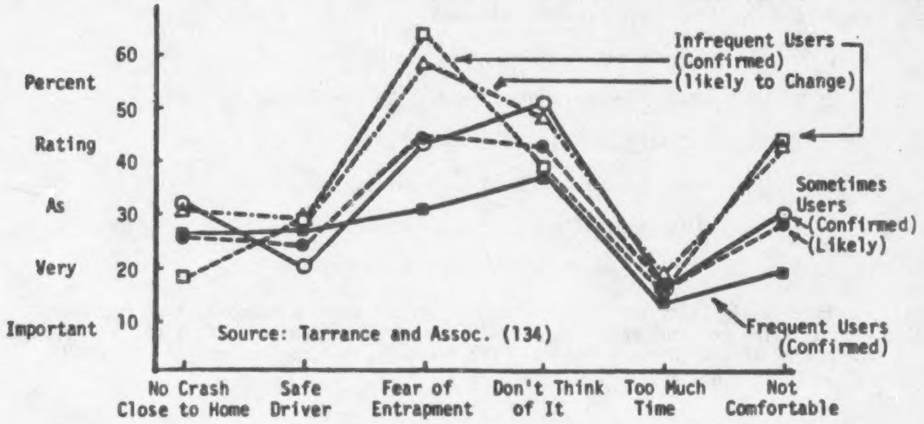
Source: Market Opinion Research (78)



Source: Market Opinion Research (78)

Figure 13
Reported Safety Belt Use As A Function of Fear of Entrapment Attitude

The most recent study by Tarrance and Associates also found fear of entrapment to be a widely held belief (134). In fact, as figure 14 shows, this fear was among the most prominent among reasons given for belt non-use.



Source: Tarrance and Assoc. (134)

Figure 14
Reasons Given for Nonuse of Safety Belts

Finally, in this discussion of the reasons why people do not use their safety belts, a finding of the 1976 Yankelovich, Skelley, and White (62) survey should be mentioned. These researchers found that:

- o More than half of all drivers harbor considerable misinformation about safety belts and safety belt usage;
- o Only about a quarter of drivers had any knowledge of the benefits of safety belts in reducing deaths and injuries.

The findings concerning (1) the lack of firm opinions held about safety belt usage; (2) the vague and poor attitudes towards safety belt usage held by moderate, infrequent and nonusers; (3) the considerable fear of entrapment held by many user types; (4) the lack of understanding of how belts work, their effectiveness, etc. and (5) the strong findings relative to the potential for using driver authority as a motivator for safety belt usage, all point to the need for more effective public information and education programs in this area. These factors also suggest that if such programs can be put together which are sufficiently powerful to overcome the lack of knowledge and the neutral-to-negative attitudes towards safety belts, considerable progress can be made in increasing belt usage.

IV. Review of Program Approaches to Increase Safety Belt and Child Restraint Usage

The primary methods which are available to the States for increasing safety belt and child restraint usage include:

- Public Information (mass media) Campaigns;
- Educational Programs for Specific Target Audiences;
- Child Safety Seat Distribution Programs;
- Incentive Programs Which Reward Safety Belt Usage;
- Organizational Safety Belt Use Policies; and
- Safety Belt and Child Restraint Usage Legislation.

Program evaluation, while not specifically a countermeasure, is also necessary to maximize program impact by identifying effective (and ineffective) programs. A review of the characteristics, effectiveness, and constraints of these major approaches follows.

A. Public Information (Mass Media) Campaigns

1. Overview

Public information programs which depend on the mass media are generally composed of (1) public service announcements (or) "paid-for" announcements for radio and TV; (2) print advertisements for newspapers and/or periodicals; (3) billboards, posters, and bumper stickers; and (4) brochures, mailers, litter bags, etc. Such programs are (or should be) designed to:

- Increase public awareness of an issue such as safety belt usage;
- reinforce and lend "officialness" to the messages conveyed by means of other approaches; and
- change public knowledge and attitude levels.

While mass media campaigns (used alone) have not been dramatically successful as methods to increase safety belt usage rates, there have been a number of programs which have resulted in significant increases in belt usage. The most frequent shortcoming of such campaigns, (in addition to not being accompanied by other approaches) is that they have usually been too brief to have any impact (33).

2. Foreign Experience

The inability of most media campaigns to greatly increase safety belt usage has been pointed out in a 1979 Task Force Report by NHTSA (71). This report pointed out that campaigns in (Ontario) Canada, Australia, France, and a number of other foreign countries were unable to get the majority of road users to buckle up, although most did manage to achieve usage rates in the 20-35 percent range. Some campaigns, which included other program components, have done even better.

a. The British Campaign(s)

Great Britain, was able to increase safety belt usage from 12 percent to 26 percent with a six-week television and print campaign (31). Later campaigns were able to raise the British belt usage rate to 30-35 percent, a level which they have been able to maintain with an annual public information effort. A further description of the British experience serves to illustrate the success of what was purely a mass media effort (103).

As indicated, in 1971 belt usage in Great Britain was 12 percent. This situation prompted the need for a campaign to inform the public via the media about the dangers of not wearing belts. A decision was made to contract with a commercial marketing firm to produce a series of television spots which would form the core of the campaign. This firm researched various appeals that might be effective with the British public, and fixed upon a series of interviews with accident victims during their recovery in the hospital.

A campaign was built around a series of mini-interviews conducted by a popular TV/sports figure with crash victims soon after their operations. Each of these interviews discussed the circumstances of the crash, using it as a case study to address the myths surrounding safety belts. Each commercial ended with the slogan: "Clunk-Click Every Trip" to remind passengers that the next sound they hear after closing the door ("clunk") should be the sound of their safety belt ("click").

Since 1972, the ad campaign has run every year for about six weeks per year. It costs slightly more than one million pounds ($2.5 million) each year. The Ministry of Transport estimates that during the six-week period, the advertisements reach 80-90 percent of the British public. They are shown 15-20 times each week and it is estimated that the average viewer sees one or another of the spots 8-9 times. The Ministry also printed large posters for use alongside the road and for the backs of buses in the cities. These posters illustrated the same individuals interviewed on the TV spots with the same messages. The campaigns have used newspaper advertisements and radio sparingly.

As a result of the campaigns, usage increased to about 26 percent after the first year, 28 percent the second, and has hovered between 30-33 percent since. This represents an increase over baseline of 116 percent, 133 percent, and 175 percent respectively with an overall increase of approximately 20 percentage points. The usage figures, as reported by the British Government (31, 31a, 103) are illustrated in Figure 15.

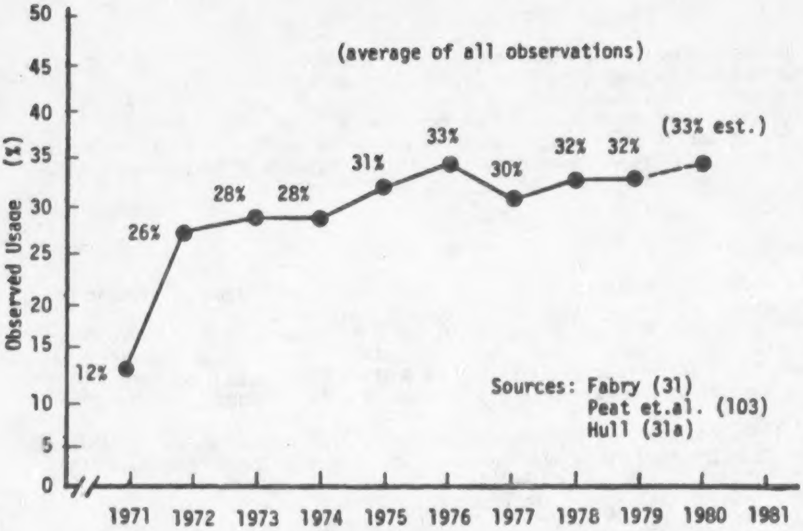


Figure 15
Effect of British Pubic Information
Campaigns on Belt Usage Rates

b. The Swedish Campaigns

In Sweden, somewhat more comprehensive public information (and education) programs were undertaken. These were conducted in conjunction with well-designed belt usage studies to determine whether or not the public information efforts were having an impact.

Overall, the Department of Traffic Safety carried out a number of campaigns to increase the use of safety belts from 1971 to 1974. In addition, programs were organized by insurance companies, well known leaders of public advocacy groups, school authorities, and others. The mass media campaigns entailed the use of newspaper articles, radio and television information programs, and radio and television spots (30, 103).

Two types of studies were conducted to determine the results of the campaigns. First of all, national probability surveys were conducted which were based on statistical selection of time, place, and traffic flow ("representative" studies). Secondly, random ("non-representative") surveys were conducted. The results from both of these studies showed a definite increase in the use of safety belts. The pre-(1971) and post-(1974) usage rates in Sweden are shown in Table 9 below.

Table 9
Pre and Post Campaign Usage Rates in Sweden

Roads Representative Studies	1971 (Pre)	1974 (Post)
o National Truck Roads	21.0%	34.0%
o Country through Roads	18.0%	29.0%
Random Studies		
o All Roads	15.2%	35.6%

Sources: Edvardsson and Degermark (30).
Peat, et.al. (103).

The Road Safety Office took much available research into account in developing their campaigns. An example of research considered was Bandura's theory of modelling, which states that learning can take place by direct observation of models who are seen as being important to the observer. Supported by this and other theories, interest was directed to a great extent to organizations, companies, authorities, and other small groups. These groups were urged to initiate activities of their own, led by leaders known within the organizations (30, 103).

In the first campaign, the Road Safety Office directed its materials toward private companies to get belt users to influence nonusers. The campaign material included a film and a "company package" with suggestions for activities to be conducted within the firm. In addition, fact sheets and informational material directed toward the police were produced.

In the second campaign, one of the efforts focused on schools. A figure called "The Belt Man" was created and used. His task was to remind motorists about the seat belt, but "being short of time" he asked pupils for their help. The students were give identity cards and "Belt Man" badges. In each group an attempt was made to reach peer leaders, who could influence other members of the group.

The greatest effort was expended in the third campaign. It was primarily aimed at organizations and companies, but greater emphasis was placed on incentives and rewards. For example, a safety belt pin was given to those promising to use the belt. Making use of radio, television, and the press, the campaign also incorporated what was called the "Bingo War." This program utilized bingo cards, with which it was possible to win cars, TV sets and other prizes. These cards were given only to people observed using their belts. Drawings took place on TV.

The fourth campaign was similar to the first and second. The fifth and sixth campaigns dealt primarily with injuries in urban traffic and included previously produced material as well. Women were focused on to a greater extent in the later campaigns, as a number of studies indicated that women tended to accept use of seat belts more than men and it was thus hoped that the women would influence the men.

Figure 16 shows the steady increase in belt usage which resulted from these public information (and education) efforts. From this figure it can be seen that belt usage rates increased from approximately 15 percent to 20 percent by the end of 1971; to 28 percent by the end of 1972; to 32 percent by the end of 1973; and to 36 percent by the end of 1974. These represent increases of 30 percent, 84 percent, 110 percent, and 136 percent, respectively. For a total increase of approximately 21 percentage points. Usage rates continued to rise to approximately 42 percent just before mandatory safety belt usage legislation was passed (30, 103).

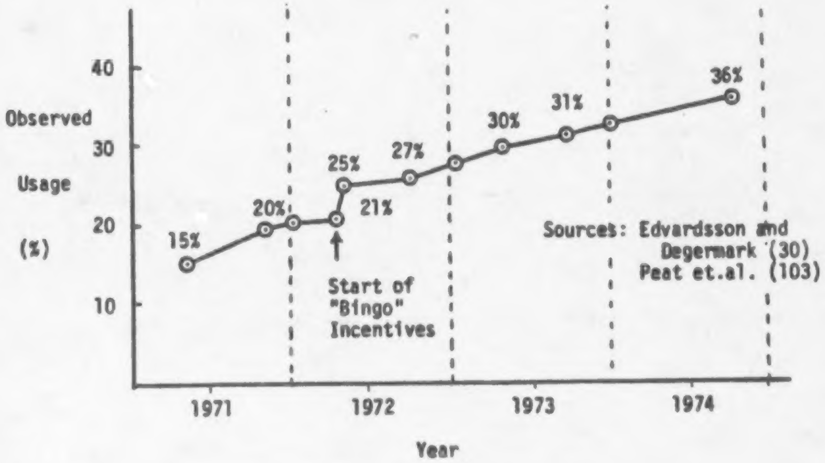


Figure 16
The Effects of Public Information Campaigns on Safety
Belt Usage Rates in Sweden
(1971-1974)

c. Other Foreign Examples

While the above in-depth examples provide an insight as to the types of campaigns which have resulted in usage rates greater than 30 percent, it must be remembered that there are many other foreign examples of moderately successful programs. Australia, France, the Netherlands, Norway, and Ontario, Canada all achieved usage rates in the 20-35 percent range before passing legislation. In many past reports (71, 95, 114) such results have been viewed from a negative standpoint since most of these nations went on to pass legislation which doubled or tripled usage rates. However, it should be remembered that:

- most such public information programs were limited almost entirely to mass media;
- such efforts generally doubled or tripled pre-existing baseline usage rates; and
- in nearly all cases, the ability to pass safety belt legislation was attributed to the knowledge and attitude changes resulting from such media programs.

A summary of the estimated pre-legislation usage rates for several of these nations is shown in Table 10.

Table 10
Estimates of Pre-Legislation Usage Rates in Several Foreign Nations

Australia	28%	Netherlands	26%
Canada	24%	New Zealand	33%
Denmark	25%	Norway	36%
Finland	40%	Sweden	36%
France	24%	Switzerland	32%
Great Britan	33%	West Germany	34%

Note: Figures given are averages for overall rates based on data derived from several studies (7, 8, 71, 75, 103, 114, 163).

Overall, these foreign data strongly suggest that a usage rate in excess of 30 percent can be expected from a fully implemented voluntary safety belt usage effort.

3. The United States Experience

a. The Oakland County, Michigan Campaign

One of the first public information (and education) programs conducted in the United States was a three-month campaign conducted in Oakland County, Michigan, by the Oakland County Traffic Improvement Association (97). This program, while primarily a media campaign, also included some short term educational components.

The program was based primarily on the print media. The theme "It's lock it to me time" was based on a popular TV show character (Judy Carne). The theme was promoted via 104,000 brochures, 22,500 bumper stickers, and 5,400 posters. The population of Oakland County was 900,000 at that time.

In addition to the distribution of the above materials, a slide show depicting local accident case histories and the value of safety belts in saving lives, was developed and presented to approximately 30,000 persons (3 percent of the population) by means of a 35-person speakers bureau (4,000 exposed), major employers (20,000 exposed), junior high schools (4,000 exposed), Jaycees, Boy Scouts, Girl Scouts, and Campfire Girls (no exposure estimate given).

Other efforts were also included such as (1) Safety Belt Day and Safety Belt Week proclamations, (2) "Safety Bug" pledge cards given to elementary students, (3) a teenage safety conference featuring a "Miss Teen Lock-it," and (4) shopping mall exhibits. Apparently, no radio or TV spots were developed or used.

An evaluation of the extent to which the program reached and informed the public revealed that in a recognition test, 42 percent of those queried, recognized the slogan "It's lock it to me time" and understood its meaning. Recall tests resulted in much lower numbers. The results of the survey can be summarized as follows:

- 98 percent recognized NSC slogan "Buckle Up for Safety"
- 42 percent recognized campaign slogan "Lock It to Me."
- 19 percent recognized NSC slogan "What's Your Excuse?"
- Of those who recognized the campaign slogan 86 percent said that they believed in safety belts and 24 percent said that they always wear their belts.
- Of those who did not recognize the campaign slogan, 79 percent believed in safety belts and 29 percent said they always used them.

From these data it is apparent that, while a considerable portion of the population was "reached" (according to recognition test results), the program did not have a major impact in changing existing attitudes or behaviors.

This is probably due to the fact that the majority of persons were reached only by means of mass media. Here the project report suggested that:

- 35 percent saw the slogan on a poster
- 25 percent saw the slogan on a bumper sticker
- 18 percent saw the slogan on TV
- 13 percent heard the slogan on the radio, and
- 10 percent saw the slogan in the newspaper.

In order to evaluate the campaigns effectiveness in terms of increasing safety belt usage rates, surveys were conducted at 30 carefully selected intersections with in the county both before and after the campaign. The results of the surveys were as follows:

(1) Safety belt usage among Oakland County drivers increased from 17.5 percent to 20.8 percent. When applied to the number of licensed drivers in the county, the 3.3 percentage point increase represented 16,500 more belt users among drivers.

(2) Safety belt usage among Oakland County passengers increased from 11.6 percent to 12.1 percent. Translated into passengers, the .5 percent increase represented an additional 1,137 passengers to be wearing belts following the campaign.

While the gains in usage rates were obviously small, it must be remembered that, in spite of the efforts to reach target groups through small-group educational programs, only about 10 percent of the estimated 400,000 persons "reached" (or 3 percent of the total population) were reached through such educational programs. The majority (approximately 90 percent) were reached through mass print media only.

b. Motorists Information Campaigns (1977)

In the early part of April 1977, Motorists Information, Inc., initiated a campaign in the Grand Rapids, Michigan area to increase public understanding and awareness of the value of safety belts and to provide more positive attitudes toward safety belt usage. The initial campaign (70) was six weeks in length and utilized traditional mass media advertising such as television, radio, billboards, and newspapers. A theme entitled "Somebody Needs You" was developed on the basis of extensive motivational research. Radio and televison spots developed around this theme emphasized the loved ones who would be affected if an automobile crash were to claim one's life.

Basically this campaign was initiated as a precursor to a larger effort which was to follow. It was designed to determine whether or not a well-conceived and executed media program could result in a significant shift in attitudes toward safety belt usage. An evaluation, based on attitude shifts, was conducted. Using several indicators, this study found that public understanding and awareness of the value of safety belts did increase during the course of the campaign (70).

First, the reported use of safety belts (always or most of the time) went up from 29 percent to 41 percent (an increase of 41 percent or 12 percentage points). Second the proportion of people who thought "always wearing a safety belt" was the most important among a group of safe driving behaviors increased from 14 percent to 24 percent (an increase of 71 percent or 10 percentage points). The results of the study also indicated that the public information effort increased acceptance of safety belt legislation from 34 percent to 44 percent (an increase of 30 percent or 10 percentage points).

Based on the results of the first effort, a second campaign was conducted over a nine week period in the fall of 1977 in Southeast Michigan (84). Advertising included newspaper ads, outdoor billboards and bus posters, and several newly developed TV and radio spots. In addition, a public relations program, including a speakers bureau and appearances on local radio and TV talk shows, were initiated.

Overall, the final results of the nine week program indicated that safety belt usage increased from 12.4 percent to 16.8 percent (an increase of 35 percent or 4.4 percentage points). Initial usage rates (and rate increases) were greatest for: (a) women, (b) higher socio-economic drivers; and (c) drivers of newer vehicles. Usage rates in some areas went to as high as 42 percent. Results for various communities are shown in Table 11.

Table 11
Effect of Motorists Information Inc. Public Information Campaign on Various Communities in Southeast Michigan

Communities	Pre	Post	Point Increase	Percentage Increase
Franklin	20%	42%	22%	110%
Berkeley	19%	36%	17%	89%
Union Lake	22%	37%	15%	68%
Birmingham	22%	36%	14%	64%
Oak Park	15%	29%	14%	93%
Madison Hts	11%	25%	14%	127%
Dearborn	14%	20%	6%	43%
Livonia	16%	23%	7%	44%
Taylor	13%	16%	3%	23%
Sterling Hts	19%	20%	1%	5%
Warren	12%	16%	4%	33%
Gross Pts	18%	22%	4%	22%

Source: Motorists Information Inc. (84)

While the overall success of this project was modest, it is clear that certain elements of the population were reached and affected more than others. Considering the fact that the effort was nearly exclusively a mass media campaign and considering the fact that it was only 9 weeks in duration, the doubling of usage rates among some segments of the population is notable (e.g., from 20 percent to 42 percent in Livonia and from 11 percent to 25 percent in Madison Heights). However, the campaign was expensive as nearly $900,000 was spent on paid advertising.

c. Other Mass Media Efforts to Increase Safety Belt Usage

Two additional campaigns were conducted for the purpose of evaluating the effectiveness of mass media efforts on observed safety belt usage. In one study (37) conducted for NHTSA in 1971, the effectiveness of public service spots on radio and TV was studied. In this effort, three California towns were selected for observation. One (Salinas) received relatively high exposure of public service announcements concerning safety belt usage over a 5-week period. Another town (Modesto) received moderate public service time exposure. The third town (Bakersfield) was chosen as a control and received only normal public service time.

Pre-and post-campaign observations indicated that in the high exposure area (Salinas), safety belt usage in low speed situations increased from 10 percent to 14 percent (a 40 percent or 4 percentage point increase). This increase dissipated immediately following the completion of the public service effort. No increases were found for high speed situations and no increases occurred in Modesto which received "moderate" public service attention to safety belts. The results were further complicated by the finding of increased safety belt usage in low speed situations in the control town of Bakersfield (from 9 percent before the campaign period to 11 percent during the campaign period to 16 percent three weeks after the campaign). The study concluded that the public service compaign had no significant impact on safety belt usage rates.

A second study conducted by the Insurance Institute for Highway Safety (116) evaluated the effectiveness of cable television messages in terms of increasing safety belt usage. In this study, several quality television messages were developed and aired on one of two cables for a period of nine months. At least one spot was similar to those used in the British program. An average of more than 100 showings per month (or approximately 3 per day) was reported. Observational surveys of persons in the Cable A area (which received the messages) and in the Cable B area (which received no messages) revealed no differences in belt usage rates. The researchers concluded that the television messages, alone, had no effect on belt wearing behavior.

d. Media Campaigns to Increase Child Restraint Usage

Two examples of mass media efforts to increase child restraint usage can also be mentioned. The effects of both are confounded to some degree with the effects of legislation. However, in both cases the design of the programs allows some assessement of their impact.

(1) Tennessee

In the State of Tennessee, after passing child restraint legislation, a public information program was established to inform the public of the law and of the need for child restraints (105). Two public information plans (or approaches) were included: a basic State plan (BSP) and a comprehensive plan (CP).

The basic State plan (BSP) was a control condition involving the distribution of brochures informing parents of children under the age of four of the law and how they could protect their children. Stand-up posters were also designed and distributed with the brochures. Distribution was made to hospitals, doctors' offices, clinics, and other strategic places which parents with small children frequently visited.

The comprehensive plan (CP) was more substantial and included a mass media approach to inform the general public about the law and the need for child passenger protection. Public service announcements, news spots and talk shows on television and radio were used. Newspaper editorials and billboards were also used as part of the comprehensive plan.

The master plan for the study called for each target area to use the basic State plan (BSP) first. During each 6 month period, an additional target area would use the comprehensive plan (CP), until all target areas were included. A loaner program designed to provide child restraints to citizens who could not afford them was also implemented in two target areas.

Table 12
A Comparison of the Effects of Two Public Information Programs on Usage Rates in Tennessee

	Usage Rates (%) for Different Conditions			
Area	Baseline	BSP (average)	CP (average)	Overall Increase
Nashville	14.0		21.2	7.2
Memphis	10.9	13.5	19.3	8.4
Knoxville	12.8	20.4	23.6	10.8
Chattanooga	10.9	12.9	19.4	8.5
Tri-Cities	10.7	17.6	20.6	9.9
Urban Average	11.8	16.1	21.0	9.2
Nonurban Average	6.5	11.1	13.8	7.3
Statewide Estimates	9.2	13.6	17.4	8.2

BSP = Basic State Plan
CP = Comprehensive Plan

Source: Perry et al. (105).

In all target areas, usage rates were higher during the comprehensive program (CP) period than during either the baseline period or the basic State plan (BSP) period. Table 12 shows this. Overall, it appears that both programs may have had some impact on usage rates. However, any such effect is clearly confounded with the passage of the legislation and with the passage of time since the comprehensive program always followed the basic State plan.

(2) New South Wales, Australia

In New South Wales, a 1979 mass media effort was implemented to supplement passage of a 1977 child restraint law (38, 39, 40). Considerable motivational research was taken into account in developing themes, messages, and finally the television commericals which were used. Emphasis was also placed on the use of new "booster seats" to overcome resistance to the bulkier forms of child restraints. The campaign was reported to have raised overall usage rates of children under age 8 years from 40 percent to 55 percent, an increase of 38 percent or 15 percentage points. However, incorrect usage, (a major problem in the child restraint area) also increased (40).

e. Mass Media Program Summary and Constraints

Media programs designed to increase safety belt usage have had moderate successes in foreign countries. The British obtained a 30-35 percent usage rate by means of a purely mass media approach. Other nations have also been able to obtain modest increases. In the United States mass media efforts have never been implemented on a national scale. Smaller scale studies have not been very successful in increasing usage rates. However, several efforts have resulted in significant attitude shifts and the Motorists Information Program in Michigan (70, 84) demonstrated that such efforts can result in reasonably large (20-25 percentage point) increases among some segments of the population.

There are many foreign and domestic indications that mass media programs can result in significant changes in attitudes towards safety belt usage (and safety belt legislation). In several nations, including Australia, Sweden, France, (Ontario) Canada, and more recently in Great Britian, it is clear that such programs did much to facilitate passage and implementation of safety belt usage legislation (7, 8, 71, 103).

However, mass media programs alone do not appear to be powerful motivators of belt usage behavior. If substantial usage rates are to be obtained in the United States, either more powerful, nationally scoped media efforts will have to be developed and implemented or (more likely) other approaches involving educational and incentive programs must be integrated into a comprehensive program including mass media. Such programs must have a longer duration than past programs.

B. Educational Programs (including Child Safety Seat Distribution Efforts)

Educational programs differ from mass media programs in that they are more comprehensive, and deal with smaller target groups in any single delivery. Where mass media programs involve brief messages delivered to many potential targets, educational programs are longer, more informative, more persuasive efforts delivered in small group settings (e.g., driver education classes).

Much potential for increasing safety belt and child restriant usage among specific target groups exists with education programs. In addition, making child safety seats available to the public by means of rental, loan, and discount purchase programs has proved to be one of the most popular program areas with child safety seat advocates. Unfortunately, in the safety belt area, too few promotional efforts have included educational programs. Nearly all past efforts to increase the voluntary use of safety belts have limited themselves primarily to the use of mass media. In the child restraint area, while educational programs for physicians, hospital, and new parents have been popular, most have not been objectively evaluated. Where educational efforts have been attempted, however, it has appeared that usage rates have increased modestly among the target groups exposed.

1. Elementary School Programs

a. Loudoun County, Virginia

In the United States, the NHTSA has developed a number of educational materials to promote safety belt usage among school aged children. Some of these materials include: (1) a safety belt "Fact Book"; (2) a booklet entitled "Teaching Children About Safety Belts"; and (3) a "Safety Belt Game." These materials were distributed to teachers in Loudoun County, Virginia schools (125). The teachers were asked to spend approximately 45 minutes per week (for a one-month period) in activities involving these materials. Each child was exposed to approximately 3 hours of safety belt activity over the one-month period.

Observational and interview studies were conducted before and after the program. The observational studies were conducted both in Loudoun County, Virginia and in a control (Prince Georges) county in Maryland. The results of the interviews indicated that about 70 percent of the students (age 6-11) discussed what they had learned with their parents. Students who were observed to be wearing their safety belts reported such discussions more frequently (81 percent) than non-wearers (68 percent). The proportion of children who said they wore their belts most or all of the time increased from 13 percent to 28 percent (an increase of more than 100 percent or 15 percentage points). The two most frequently given reasons for not wearing belts were "no real reason, don't think of it" (40 percent) and "uncomfortable" (20 percent).

The results of observational surveys indicated that actual belt use was much lower than reported belt use. However, actual use increased from 6.1 percent to 9.9 percent (a 3.8 percentage point increase). As figure 17 indicates, usage rates actually decreased in the control county.

While there was no observed effect on the belt usage of adolescents or adults in Loudoun County, the proportion of teachers who reported using safety belts either "most of the time" or "always" increased from 41 percent before the program to 76 percent after the program (an increase of nearly 90 percent or 35 percentage points). Most likely, these reported usage rates, like those for the children, are inflated. However, the reported increases are large and significant.

Source: Senk and Schwartz (125)

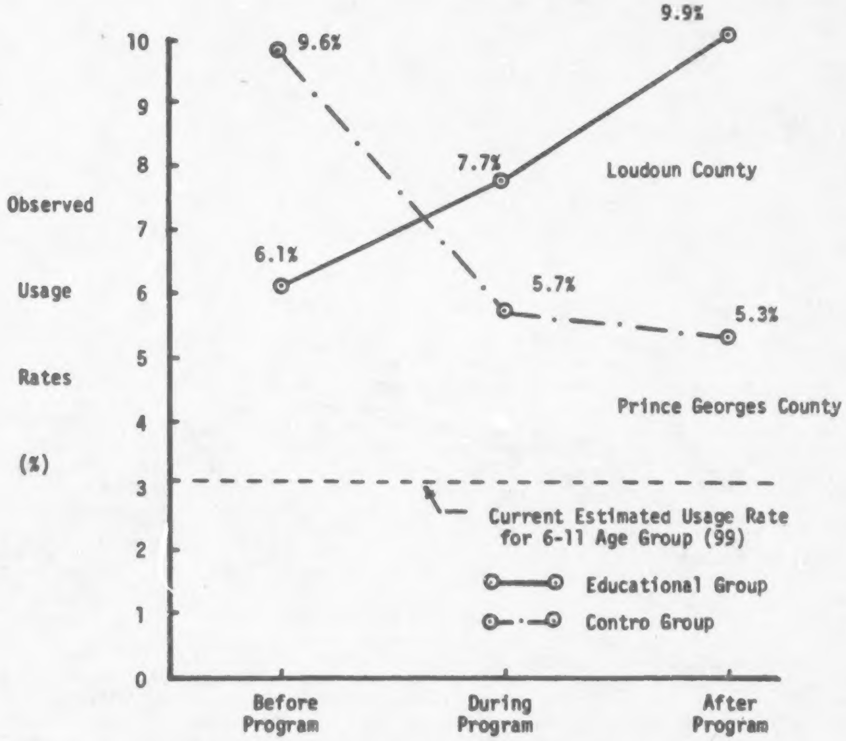


Figure 17
Safety Belt Usage Rates for Children Age 16-11 in
Loudoun County, Virginia, and Prince Georges County, Maryland

Finally, a bumper sticker was also made available for each child and observed usage rates were noted for occupants of cars which displayed the sticker as well as for those which did not . As Table 13 shows, observed belt usage was greater for all age groups of occupants in cars which displayed the bumper sticker.

Table 13
Belt Usage in Cars with and Without
Safety Belt Bumper Stickers Displayed

Age Group	Belt Usage Bumper Sticker	No Bumper Sticker
Adults	22%	8%
12-17	9%	4%
6-11	16%	4%
Under 6*	3%	1%

*Excluding children in car seats.

Source: Senk and Schwartz (125).

The failure to observe an increase in the safety belt use of adolescents and adults was not anticipated since a number of studies have suggested that safety belt (and child restraint) usage among children is usually accompanied by slightly greater usage rates among the parents of such children. In a Canadian study (4), for example, the safety belt usage of parents of elementary children exposed to a safety belt education program increased for up to six months following the program. Also, in Tennessee (105), the statewide safety belt usage of parents (with small children in their cars) increased from 3.6 percent before the Tennessee child restraint law was passed to 5 percent after the law was passed. The observed increase in urban areas was from 4.5 percent to 7.1 percent.

b. Statewide Programs

There are currently a number of elementary school safety belt education programs being implemented across the nation. Notable among these are programs in the States of Michigan, Missouri, Connecticut, and New Jersey which have distributed privately developed "Beltman" programs to a large proportion of elementary schools in the State. Also, in the State of Washington, extensive use has been made of the "K-12 Safety Belt Activity Guide" developed by the NHTSA. Few of these programs have been extensively evaluated. However, some States, such as New Jersey and Missouri have included evaluation activities as part of their on-going implementation (and educational) process.

1. New Jersey

The New Jersey Office of Highway Safety distributed "Beltman" educational programs to all of the 2,800 elementary schools in New Jersey. As part of the education program teachers used 30-day usage charts to monitor the belt usage behavior of second and third graders. It was felt that the responses obtained from the 30-day chart for belt usage under various riding conditions were reasonably accurate because of the honesty of children at that age (7-9). Approximately 26 percent of the children indicated that they wore their belts always or most of the time during the program. Usage was highest on weekends and considerable interaction occurred between children and their parents (93).

2. Missouri

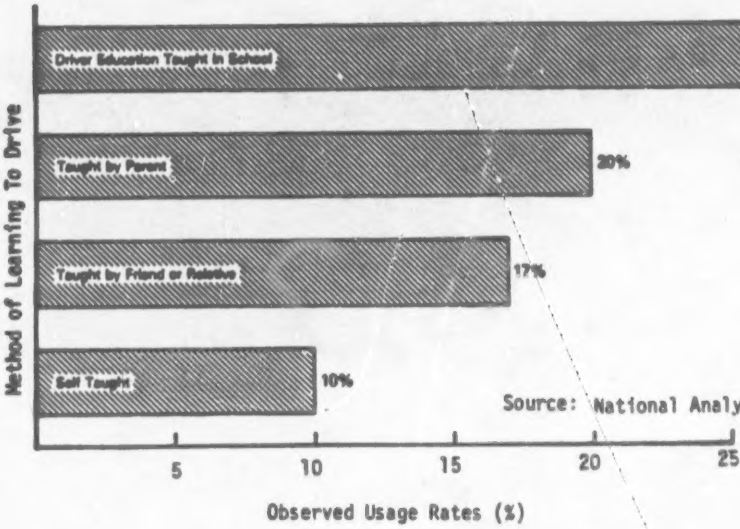
In another statewide program, post-program usage rates were even higher. In this program, the State of Missouri distributed the "Beltman" program to a number of elementary schools and conducted (reported usage) surveys before and after program exposure for approximately 500 third graders. The results indicated that the proportion who said they "always" wore their belts increased from 5 percent to 20 percent and the proportion who said they wore their belts "most of the time" increased from 13 percent to 26 percent. Thus, the proportion who reported usage of their belts either "always" or "most of the time" increased from 18 percent to 46 percent (an increase of more than 150 percent or 28 percentage points). The proportion who said they "never" wore their belt decreased from 47 percent to 21 percent (132).

2. Driver Education Programs

a. Survey Findings

The 1977 Market Opinion Research Study (78) indicated that persons who had taken formal driver training reported that they wore safety belts more frequently immediately following such training than they did at the time of the survey. This was in spite of the fact that the safety belt program elements in such classes has been quite minimal.

Supporting the potential for forums such as driver education to increase safety belt usage, a 1971 study conducted for the NHTSA (85) indicated that significantly more persons who have taken formal driver education training use belts than persons who have not. This finding is illustrated in Figure 18. The driver education group used belts 160 percent more frequently than those who taught themselves how to drive. Again, this is in spite of minimal emphasis on safety belt usage in most driver education courses.



Source: National Analysts (85)

Figure 18
Safety Belt Usage as a Function of Driver Training Received

b. A Missouri Study

More recently a study was conducted in Missouri by the National Public Services Research Institute (NPSRI) to develop and test a safety belt supplemental program for a driver education course (86). The NPSRI researchers felt that the low usage of restraints among young people was due in part to the fact that they did not generally recognize the magnitude of forces involved in a crash. They felt that purely informational programs had not proved effective in the past but reasoned that belt use might be increased by a program that would not only provide information, but would also permit students to (vicariously) experience some of the effects of a collision.

Four programs were developed. The first program was an "information program," including only a basic information component. It contained an instructor's guide, a student's guide, and a film entitled "Dice in a Box." The student's guide covered what happens in a crash, how belts work, the effectiveness of belts and some of the excuses why people say they don't wear belts.

The second program was a "peer testimonial" program, which (in addition to the basic informational program) used a slide/tape presentation that permitted students to see the devastating long term effects of an accident on another young person and thus to experience such effects, at least indirectly.

The last two programs included direct experience, in addition to the informational program. One was a "vehicle program," in which students rode in an automobile taken through evasive maneuvers (belted and unbelted) and were able to actually experience the effects of vehicle motion and the protection afforted by belts. The other was a "convincer program," in which students road on a safety belt convincer and physically experienced the forces of a low-speed collision while restrained and protected by safety belts.

Knowledge and attitude surveys, as well as observational studies, were conducted for all four groups. The results indicated that each program had a significant beneficial effect in terms of increased knowledge scores, more favorable attitudes toward safety belts and increased safety belt usage. Table 14 shows the increases in belt usage that resulted.

Table 14
Effect of Four Driver Education Programs on the Usage Rates of Students Exposed

Program	Usage Rates Pre	 Post	 Point Increase	 Percentage Increase
Information	3.3%	8.5%	5.2%	157%
Testimonial	4.1%	6.7%	2.6%	63%
Vehicle	13.5%	26.7%	13.2%	49%
Convincer	9.0%	13.2%	4.2%	47%

Source: NPSRI (86)

Thus, increases in observed usage rates ranged from 3 to 13 percentage points. One program attained a usage rate of nearly 30 percent. The in-vehicle program appeared to be most effective in terms of the magnitude of the increase in usage rates which resulted.

c. A Texas Study

In another, less formally reported study, a graduate student at Texas A&M University attempted to assess the impact of a series of films, in conjunction with a high school driver education course, on students' reported belt usage (138).

The films used were those distributed by the NHTSA in the 1980-81 workshop series on occupant restraints. They consisted of several short films (2-8 minutes) which dealt with (1) the dynamics of a crash; (2) the effectiveness of lap and shoulder belts and (3) the myths surrounding belt usage.

Students anonymously responded to three different restraint device questionnaires during the driver education courses. The first was administered during the second class period of the course, which was prior to any restraint device instruction. After receiving classroom, multiple car training , and simulation instruction, the students were exposed to the audio-visual materials and then given a second questionnaire.

The third questionnaire was given on the last class day and followed a total of 32 hours of classroom, 8 hours of simulation, 8 hours of multiple car range, 3 hours of BTW, and 2 hours of emergency and evasive training.

The most interesting impact of the program was on the proportion of persons who stated that they "never" wore belts. This proportion decreased from 46 percent to 26 percent to 10 percent for the 3 questionnaires respectively. Reported usage by the end of the course was 90 percent. It is also interesting to note that 86 percent of the students felt that audio-visual package taught them the importance of belts.

3. A "Convincer" Demonstration for the General Public

A much earlier study tested the use of a "convincer" on the safety belt usage of fair attendees (62). In this study persons attending a local fair were solicited to observe and ride a convincer. Their attitudes towards safety belts and their reported belt usage were measured before and after riding the convincer and after a period of 2-4 weeks following the experience.

While the data collection method did not allow a determination of usage rate increases in terms of percentages, the results indicated that the safety belt convincer experience significantly increased seat belt usage during a variety of typical driving situations. All types of driving situations included in the test (e.g., in town, on long trips, on expressways, etc.) showed significant increases of reported safety belt usage after drivers had ridden the convincer. It was also concluded that attitudes concerning the effectiveness of safety belts were improved significantly. Finally, it was also reported that the safety belt convincer was a very effective public information device in that it created considerable public and media awareness and considerable discussion among fair attendees.

Two of the studies mentioned above (86, 62) suggest significant increases in safety belt usage as a result of simply being exposed to the safety belt convincer. Interestingly in the driver education study (86), the convincer program was less powerful than the others. This is being investigated further. At the very least, the convincer represents a powerful media attraction and should be considered for inclusion in any comprehensive public information program.

4. Educational Workshops for Adults

One other form of education is the educational workshop. Such media have proved to be successful methods to encourage increased participation in both the safety belt and child restraint areas. Several such workshop series have been conducted by NHTSA in recent years. Most of these were designed to increase safety belt and child restraint promotional activity among State safety personnel. Two such series were conducted in 1979, one designed to increase activity in the child restraint area (144) and the other to increase interest in the general area of occupant restraints (i.e., safety belts, child restraints and automatic restraints).

These two initial series of workshops were followed by three geographically separate follow-up series (i.e., East, Central, and West) designed to further promote activity in the area of occupant restraints and to disseminate audio-visual and print materials designed to help the States advocate such programs. The last three series were conducted during 1980-81.

Perhaps the best evidence for the effectiveness of the workshop series is the increased activity in the States relative to occupant restraint programs, especially in the child restraint area. A number of States including California, Colorado, Wisconsin, Minnesota, Florida, Mississippi, Iowa, and Utan have organized reasonably comprehensive child restraint programs as a direct result of the NHTSA workshop series. Some legislative bills were actually initiated and/or revised during or immediately following workshop sessions.

5. Child Restraint Educational Programs

There have been a number of examples of successful educational efforts in the child restraint area. Many of these are apparent in the legislative successes which have already occurred in 11 States. Legislation is not passed in areas such as this without considerable education of physicians, parents, and, of course, legislators.

In the more traditional role of education, however, there have also been some significant documented successes in changing child restraint usage rates. Two studies have been conducted by the Insurance Institute for Highway Safety (IIHS) to determine the effectiveness of various types of child restraint educational programs for new parents. In the first study (111) three separate approaches were used in a hospital setting. They included: (1) literature plus readily available infant carriers for purchase; (2) literature plus readily available infant carriers for purchase plus a personal discussion, and (3) literature plus the offer of a free child restraint device. To measure the effects of these programs, the use of child restaints by parents of all three groups was monitored both upon leaving the hospital and 2-4 months later as part of follow-up visits to the hospital.

The results indicated that all educational conditions increased the use of child restraints over a control (no education) group. The highest usage was obtained during the follow-up visits by the approach which included the offer of a free seat. In this condition 41 percent usage was observed compared to 26 percent usage in the no education group (a 57 percent or 15 percentage point increase). The "literature only" and the "literature plus personal discussion" groups attained usage rates of 31 percent and 36 percent respectively. The differences between the four groups in terms of correct usage were not as great, however, with only the "free-seat" condition being significantly greater than the control group. Table 15 summarizes the results of the study.

Table 15
Observed Restraint Usage in Four Study Groups at 2-4 Follow-up Period

Study Group	% Correctly Using Proper Restraint	% Using Proper Restraint	% Using Improper Restraint	% Held in Someones Arms	% On Vehicle Seat
No treatment	(21%)	26%	29%	43%	2%
Literature only	(22%)	31%	19%	46%	4%
Literature and personal discussion	(20%)	36%	15%	48%	1%
Literature and free seat	(28%)	41%	6%	51%	3%

Source: Reisinger and Williams (111)

As is apparent from Table 15, the primary effect of the educational programs appeared to be one of lowering the proportion using an improper seat and increasing the proportion using a proper seat. There was little effect in terms of a reduction in the proportion of infants carried in someone's arms (on lap) and little effect (except in the "free seat" condition) in terms of increased use of the safety belt to properly fasten the child restraint.

In a second study supported by the IIHS, the effect of pediatricians' counseling to parents on infant restraints was evaluated (112). An experimental group received child passenger safety education during their post-partum stay and 1-2 months later during "well-child" visits. The educational program consisted of a discussion with the physician on how to protect infants in cars, a pamphlet on car safety, a formal prescription for a restraint and an actual demonstration by the pediatrician on the correct use of a restraint.

Figure 19 shows that while the education program did result in increased restraint usage over that of a control group (72 percent or 32 percentage points higher at the 2-month period) the differences between the two groups dissipated over time, primarily due to an increase in restraint usage by the control group (see figure 19). Restraint usage by both groups was very high (63 percent for the education group and 58 percent for the comparison group at 15 months). Correct usage was also very high (80-90 percent of total usage).

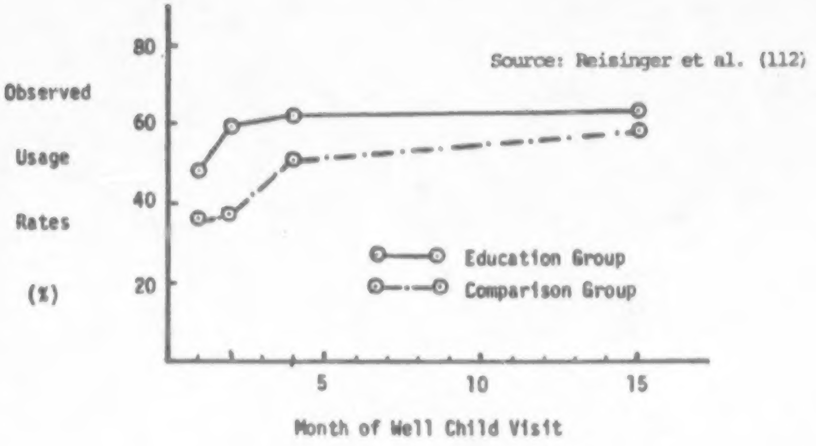


Figure 19
The Effects of An Educational Program by Pediatricians on Child Restraint Usage

In another study conducted in Seattle, Washington (4) researchers set out to determine whether or not a variety of educational programs could have an impact on the use of child safety seats by parents. This study found that the most extensive educational program, consisting of handout literature, exposure to a film and a demonstration on the use of child seats resulted in 60 percent of the parents exposed to the program purchasing a child restraint device. This was compared to a 37 percent purchase rate among a control group of parents (an increase of 67 percent or 23 percentage points).

6. Child Restraint Loaner and Rental Programs

The cost of a child restraint device has always been a major perceived obstacle to increased child restraint usage. That is why child seat loaner, rental, or discount sales programs are so important to educational attempts to increase overall child restraint usage.

In the State of Iowa, infant restraint educational packages were placed into the prenatal curricula of 60 hospitals, clinics, and maternity centers. Assistance was also provided to local groups resulting in the establishment of 104 infant restraint loaner programs. An infant restraint survey conducted in six major cities within the State (131) indicated that infant restraint usage increased from 10 percent in 1980 to 29 percent in 1981. This was an increase of 190 percent or 19 percentage points.

This type of observational evaluation data is most valuable from the standpoint of verifying the effectiveness and worth of education and loaner programs.

Again, such evidence is obviously bolstered by the fact that, nationally, child restraint usage has recently increased substantially. The fact that many observed increases have been in areas without child restraint legislation suggests strongly the worth and effectiveness of the education and child seat distribution programs. While to date, few of such efforts have been able to attain usage of such devices by the majority of the parents of child passengers, such prospects are much more probable in the near future, within a number of States.

To support this contention, the program implemented in the State of New Jersey is offered as an example. In this State an infant restraint program entitled "Do You Care Enough?" has been implemented in 59 hospitals in the State. In this program expectant mothers or new mothers in the post-partum period are exposed to a film strip which explains the need for proper infant restraints. A one-to-one discussion takes place with the new (or expectant) mother and a list of seats which have been dynamically tested and their availability is provided.

The number of new mothers exposed to the program in 1980 was approximately 38,500. By the time these mothers left the hospital, 60 percent had either purchased or were given an infant carrier. A telephone survey 30 days later indicated that 58 percent of the total sample of mothers reported "always" using an infant restraint (93).

7. Educational Program Summary and Constraints

The two most obvious constraints to the use of educational programs to increase safety belt and/or child safety seat usage are: (1) cost; and (2) the relatively small numbers of persons exposed to each delivery or presentation. The solution to both problems appears to lie with systematic efforts to solicit the support of large numbers of organizational networks to deliver safety belt and/or child restraint educational programs as a part of existing programs or as new programs delivered by volunteers. This activity is already well underway in many States with the promotion of infant and child safety restraints. Such networks of advocates have included pediatricians, organized volunteer groups called Child Passenger Safety Associations, Jayceettes, hospital associations, Red Cross Chapters, State and local PTA's, etc. It is because of the breath of organizations included in the child passenger safety educational movement that reasonably dramatic strides have been taken in recent years with verifiable impact in terms of increased usage of these devices

One other consideration must be made. Educational programs have a somewhat more predictable impact than do mass media programs. However, their effect when used alone, is generally not as dramatic as when they are acccompanied by other efforts such as incentive programs. Loaner, rental, and discount sales programs constitute incentives to use child restraints. Free-seat programs like those of some industrial companies (e.g., ARMCO) and insurance companies (e.g., League General) are greater incentives. In the safety belt area, lotteries, games, and cash rewards are all examples of incentives. Components such as these, in combination with educational efforts, appear to provide the best potential for achieving and maintaining substantial voluntary restraint usage rates.

Again, the need for educational programs for specific target groups is highlighted by findings of the Yankelovich, Skelly, and White Survey (162) that more than half of all drivers harbor considerable misinformation about safety belts and that only a quarter of drivers (have) any knowledge of the benefits of safety belts in reducing death and injury. The need is further highlighted by the findings of the Market Opinion Research Survey (78) that attitudes towards belts predict usage behavior better than any other single factor investigated. Finally, nearly every recent motivational survey has highlighted the prevalence of the unfounded fear of entrapment as the most widely held myth concerning belt usage. Educational settings offer the greatest potential for modifying such attitudes and fears.

C. Incentive and Reward Programs

Description

Incentives and rewards provide positive encouragements for increased safety belt usage. They can be offered to individuals, to organizations (e.g., employers); or to Governments (e.g., States). They are the primary means by which psychological researchers and practitioners seek to "shape" desired behavioral changes. Unfortunately, incentives and rewards have been virtually absent from past efforts to solve the real-world problem of low safety belt usage (and to a lesser extent the problem of low child restraint usage).

Instead, the current disincentives for safety belt usage include: (1) perceived discomfort and inconvenience; (2) negative peer image (among some groups); (3) discontinuance of noxious visual and/or auditory stimuli (e.g., buzzers); (4) unfounded fears that belts might trap one in a crash; and (5) a vague understanding that perhaps one might get involved in a crash and perhaps the belt will prevent the extent of one's injuries. This is not a very positive situation. Incentives and rewards must be explored in a number of settings and applied in a manner such that they compliment and maximize the impacts of other programs such as mass media, education, use requirement policies, legislation, etc.

1. Insurance Incentives

Insurance incentives offer a potentially powerful approach to encouraging an individual's (or an organization's) safety belt use. Such incentives can be applied (a) in the form of reduced premiums for belt wearers, and (b) in the form of increased coverage when belts are worn in a crash.

There are a number of reasons why any serious effort to increase safety belt or child restraint usage would want to seek the participation of property, life, and health insurance organizations:

- For one thing, insurance companies are in contact with a large majority of automobile drivers across the nation. With the exception of auto registration and licensing agencies, and service and repair businesses, it is difficult to think of an auto-related organization that reaches as many drivers as does the insurance industry.

- Secondly, the insurance function can involve the driver in a very salient way; (through his or her pocketbook), by providing economic benefits to seat belt users, and by imposing added costs to non-users. When their insurance company talks, it's reasonable to expect that a large number of drivers will listen.

Auto insurance incentives can serve either as stimulators of new belt wearing behavior or as reinforcers of existing such behavior. In the past, companies have been reluctant to reduce premiums in exchange for a promise to wear belts because they do not want to be forced into the business of either monitoring belt wearing or of denying payment if policy conditions are not met. However, some companies offer reduced premiums for similar "committments" to safer or healthier behavior, like abstention from smoking or drinking.

Relative to rewards for safety belt usage at the time of a crash, some companies have recently offered double coverage limitations (on first person claims) if belts were worn. But this provision has seldom been advertised or used as a sales approach. A "straw poll" of agents for these companies indicates that most do not even know such provisions exist. Thus, any potential effects from such incentive policies have likely not been realized.

Many health insurance companies allow claims for expenditures for preventive medicine or for medical supplies obtained to treat a specific health danger. It should be to the same economic advantage of these insurance companies, as it is for automobile insurers like League General (of Michigan), to allow the purchase of a child restraint as a valid claim item (146). Health and Life Insurers are also in a position to offer reductions in premiums in exchange for belt wearing behavior. Such reductions usually apply only to first-person coverage. This includes only a portion of auto insurance policies but it includes all of the coverage for life and health policies.

Constraints to Insurance Incentives

The primary obstacles which have arisen in response to proposed insurance incentives have been: (1) the claim that premium reductions would be too small to provide an effective incentive; (2) the claim that it would be difficult to verify belt use (among policyholders or among crash victims); and (3) the assumption that increased coverage would seldom be realized and thus may appear to the public as a "sales gimmick."

These potential problems should not hinder attempts to make such incentives or rewards available to the public. Surveys conducted for the NHTSA have found that nearly 90 percent of the public interviewed say they would wear safety belts if they would receive an incentive such as an insurance reduction (134). Further, the majority of persons exposed to recent NHTSA "focus group" sessions on safety belt messages initially believed that such sessions were being conducted by insurance companies. The credibility of the insurance industry in this area is substantial. It is likely that even a token reduction in premiums or increase in coverage would be seen by the public as an endorsement of the effectiveness of belts by an industry which depends on actuarial data for its existence.

The problem of verification of wearing rates also is not an insurmountable one. If a person says he or she is willing to wear a belt in order to get a premium reduction, that is a significant step forward. While such programs need to be tested, experience from other insurance programs suggests that a significant proportion of such persons will wear their belts and that the number of injuries prevented by such persons will compensate for any slight premium reduction provided to the total population of "professed" users. Policies for non smokers, non-drinkers and people who exercise provide some examples in other areas of insurance. Also, belt wearing in a crash is to a great degree verifiable by the types of injuries sustained (or not sustained) as well as by damages to the interior of the vehicle (e.g., the windshield). Finally, belts are now being made which can indicate whether or not they were worn in a crash.

2. Incentives to Employers

One of the primary incentives which can be given to employers to increase safety belt usage among employees is the provision of factual information pertaining to the prospect of reducing the employer's costs which result from injuries and deaths due to automobile crashes. The 1980 National Academy of Sciences Study (141) pointed out that:

> In 1978, for example, about one third of all work-related fatalities were caused by motor vehicle crashes. On the average, each such death cost the victim's employer $120,000. When on-the-job injuries are added to deaths, motor vehicle crashes directly and indirectly cost employers a total of about $1.5 billion in 1978. The employer cost of vehicle crashes off-the-job is estimated by the National Safety Council to be an additional $1.9 billion.

The Study recommended that the Federal Government should conduct studies to identify such costs and that such information should be more effectively conveyed to employers as an incentive to implement belt use policies.

An initial research effort by the NHTSA involves the pairing of similar types of crashes and comparing the injury costs for belt wearers versus non-wearers. The results have been impressive. In one pairing of nearly identical crashes (involving the same person in the same vehicle) the costs of the crash in the non-wearing situation were considerably greater than in the nearly identical later situation where the same victim was wearing a belt (151). The two crashes were rollovers at approximately the same speed. The costs due to injuries in the first (nonbelted) crash were estimated at $4,640. The costs due to injuries in the second (belted) crash were $160. This is a 29 to 1 ratio. It should be noted that the "belted" crash was the more serious of the two in terms of property damage.

Cost differentials vary in some cases by as much as $100,000 for a given pair of cases. Since costs increase geometrically as a function of injury severity, mitigation of injury tends to reduce employer costs far greater than the estimated 50 percent effectiveness of the belts in preventing injury. Table 16 shows another example of a typical comparison between an unbelted and belted driver in similar crashes.

Table 16
A Typical Comparison Between A Belted and A
Non-Belted Driver Involved in Similar Crashes

	No Safety Belt Worn	Safety Belt Worn
Driver :	36 year old man	26 year old woman
Vehicle :	1980 Malibu Sedan	1974 Matador
Crash :	Driving 25 mph; sideswiped by tractor trailer on driver side; rotated clockwise	Driving 30 mph sideswiped by tractor trailer on driver side; rotated clockwise
Injuries:	Concussion crushed collar bone AIS-2	Contusions ligament strain AIS-1
After Effects :	stiff neck; dizzy spells	None
Time Off:	3 months	3 days
Employee Costs :	$11,298	$5.00

Source: Ware (151)

3. Incentives for Individuals

Perhaps the most important of incentives, from the standpoint of influencing an individual's belt use behavior are those which provide direct rewards to drivers and passengers for wearing belts or for purchasing and using child safety seats for their children.

Several programs have been attempted which have included positive incentives. In nearly all of these programs, other factors such as the presence of belt use policies and/or an educational program are also present.

a. Berg Electronics (A DuPont Subsidiary)

One such example is also mentioned in the "use-requirement policy" section of this paper and concerns the Pennsylvania based, DuPont subsidiary, Berg Electronics (9). The Company built upon an active on-the-job belt use policy of the parent DuPont Company. In this case, management concentrated on positive incentives in the form of small prizes to employees for observed safety belt use. Some of the individual rewards which were given included low cost items such as tire gauges, flares, stickers for batteries showing how to "jump start," etc. In order to encourage peer pressure, the company structured the program so that additional individual prizes could be obtained only if the entire plant reached an observed usage rate of 90 percent or better. These rewards included items ranging from toaster ovens to gardening equipment valued at approximately $15.00 retail.

On randomly selected observation days, employees who were wearing belts were given flowers to wear on their clothing, clearly identifying those who had not been using belts. Over a six-month period, the combination of the resulting peer pressure, the prizes and a strong public information program resulted in the achievement of the company's goal of 90 percent usage (from a base level of 50 percent). Usage remained at a high level, dropping to only 86 percent six months after the end of the formal campaign. The campaign costs were approximately $20,000, of which approximately $12,000 was used to provide the prizes awarded at the end of the program. Estimates of the savings from this campaign alone were over $45,000 in fatalities, injuries, and lost work days avoided.

b. Virginia Experiment(s)

Individual incentives have also been experimented with by a group of Virginia researchers (42, 43, 44, 45). Starting with experiments on campus and moving into the community and the workplace, these researchers demonstrated that relatively low-cost, positive incentive programs can bring about an increase in belt usage.

An incentive program was implemented in four area companies (43). At each site, belt usage was assessed daily at parking lot entrances when employees arrived in the morning and when they departed in the afternoon. The incentive program consisted of giving seat belt wearers educational fliers along with chances to win prizes (similar to the Swedish "Bingo" approach). The program, was implemented either during the morning (only) or during the afternoon (only) at any one particular plant. It used prizes donated by local businesses (e.g., a free meal at a local restaurant) as the use-inducing incentives.

The incentive program had the greatest impact at the plant which had the greatest degree of interest in safety and which showed the highest pre-treatment level of belt wearing (approximately 18 percent). At this plant, belt usage increased to an average of 57 percent (an increase of 200 percent or 38 percentage points) during the afternoon sessions when the incentives were distributed. Usage also increased to a mean of 28 percent during morning observations (when incentives were not given). This represents an increase of more than 50 percent or 10 percentage points.

A striking, differential effect of the incentive program was found at the two plants where the belt usage of both hourly and salaried employees was compared. The incentives had the greatest influence on the salaried workers. With hourly workers, a mean increase in belt wearing from 2.8 percent to 4.6 percent was achieved at one plant (an increase of 65 percent or 1.8 percentage points) and an increase from 1.9 percent to 9.4 percent was achieved at the other (an increase of nearly 400 percent or 7.5 percentage points). However, salaried workers (with higher baseline rates of belt usage) showed much greater actual increases in seat belt usage, (increasing from 17.9 percent to 50.6 percent in one plant (an increase of 180 percent or 33 percentage points) and from 14.7 percent to 28.6 percent (an increase of 95 percent or nearly 14 percentage points) at the second plant.

c. Non-Incentive Employee Education Programs

It is interesting to note that in another NHTSA experiment, (106) employee education programs (without incentives) failed to result in significant increases in belt usage. The implications of the study were that such educational programs would have benefited from the presence of either positive incentives or a use requirement policy in promoting increased belt usage rates.

d. Swedish Incentive Program

Perhaps the best, large scale example of the potential for positive incentive programs, combined with other public information and education efforts, is found in the previously reviewed Swedish program (30, 103). This program made use of "bingo" cards which were given to belt users and which allowed them to play games to win prizes such as TV sets, cars and other substantial prizes. Such incentives were clearly responsible for the immediate increase in usage rates which followed the initiation of the game (see figure 20).

Similar programs were responsible for much of the steady increase which followed in subsequent years of promotional programs. As can be seen from figure 20 usage rates in rural areas went from approximately 37 percent to nearly 60 percent following the initiation of incentives (an increase of 62 percent or 23 percentage points). On city streets usage rates increased from 12 percent to 25 percent (an increase of more than 100 percent or 13 percentage points).

Finally, in the child restraint area, incentive programs such as the loaner or rental programs currently being conducted in a large numbers of States, the discount sales programs run by the American Automobile Association and the "free-seat" program of the League General Insurance Company have clearly resulted in substantial increases in child restraint usage among those affected and have thus complimented media, educational and legislative efforts. Examples of 100 percent increases in local, State, and national usage rates have already been mentioned.

Sources: Edvardsson and Degermark (30)
Peat et al. (103)

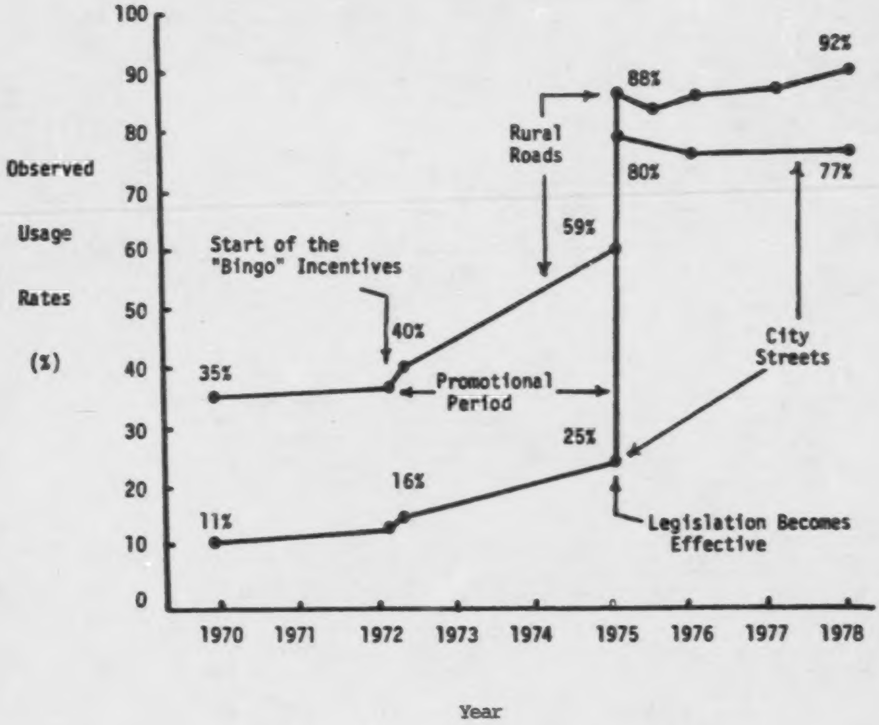


Figure 20
Safety Belt Usage Rates in Sweden Before and After
the Initiation of Incentive Programs

4. Incentive Program Summary and Constraints

The primary constraints to incentive programs, as with educational programs are: (1) costs, and (2) implementing a sufficient number of such programs in a systematic fashion so that large numbers of persons can be exposed to them. The cost problem can be minimized by using prizes contributed by local businesses (as part of their ongoing public relations and advertising efforts). Such prizes can include merchandise, meals, entertainment, etc. In the Virginia Study (43) local businesses found this to be a very acceptable method of public relations and advertising.

The need for an organized systematic, nation-wide effort in order for such programs to have an impact again suggests the need for organized "networking" of educational enforcement, medical, health, and safety organizations, to name a few. Large numbers of existing organizations (including employers) must be approached and sold on the idea that (not only is it the right thing to do, but) it is a financially sound endeavor to attempt increase safety belt (and child restraint) usage among its members and/or employees by means of education and incentive programs.

Incentive programs are perhaps the most underused programs in the area of safety restraint promotion. There is sound experimental (42, 43, 44, 45) and epidemiological (9, 30) evidence which suggests that both voluntary and mandatory belt use programs will be more successful if they include the use of incentives and/or rewards. Usage rates as high as 90 percent have been obtained in employer programs (9), and overall usage as high as 40 percent has been obtained in a national program using incentives (30, 103).

D. Employer Belt Use Policies

Description

Employer programs which include company or Government policies requiring the use of safety belts while on official business, while in company vehicles, or while on company property represent another potentially powerful approach for increasing safety belt usage among a large number of segments within the total population. As such, it is an area which was also emphasized by the 1980 National Academy of Science's Methods for Increasing Safety Belt Use report (141).

In the report, the Academy recommended that the Federal Government should provide the lead in this area by requiring all employees to wear safety belts while on the job and encouraging them to wear safety belts at all times. The Academy further recommended that the Federal Government should conduct studies to determine the cost of the non-use of safety belts in crashes and provide such information to employers as an incentive to develop employee belt use policies.

Finally, the NAS report recommended that employers should require on-the-job safety belt use by employees and that insurance companies should be encouraged to recognize the risk reduction potential of safety belt usage in their health and accident insurance rate structures.

Presently, there are only a small number of companies which have already implemented safety belt use requirements for their employees. Fewer still have enforced such policies.

In companies which have incorporated a safety belt policy as part of their company-wide industrial safety effort, the company car or vehicle is regarded as one of many pieces of equipment for which standards of safe usage are applied and enforced. When a worker drives or rides on-the-job, the vehicle is his or her workplace. Thus, the use of seat belts is mandated as a requirement for safe operational procedure and (ideally) some form of enforcement program is provided for. In some companies (such as DuPont) accident and bodily injury records appear to reflect the positive results of such a policy.

1. The DuPont Company

One of the most visible and effective employer programs is conducted by DuPont, which operates a fleet of over 2,600 vehicles. DuPont has integrated its policy of mandatory use of safety belts on company business with its general focus on safety. The company believes safety means both a more secure workforce and significant cost savings. Enforcement of the belt usage policy falls to line management which is held responsible for any employees which do not comply. As a result, usage is extremely high. This is reflected by the record of only one lost workday because of an on-the-job traffic accident in all of 1980. DuPont reinforces its safety belt policy with regular safety meetings, using audio-visual aids, and with special awards to drivers. The result is high usage rates (estimated at 60-90 percent) in plants where the usage policies are reinforced and higher usage rates for employees off-the-job than among the general public.

2. Berg Electronics

The parent company also encourages its individual plants to develop and institute additional educational and/or incentive programs of their own to encourage off-the-job and on-the-job belt use by their employees. One specific example of such a program was that of the DuPont subsidiary of Berg Electronics which was described in the previous section. In this example, a belt use policy which was bolstered by an intense educational and incentive program resulted in a belt usage rate of 90 percent (9).

3. State of Iowa Department of Transportation

States are both promoters of cost-effective belt use programs and significant employers in their own right. The Iowa DOT safety belt use policy provides a model for a State-government, mandatory belt use program. With a driver workforce of over 3,000 employees, Iowa DOT requires belt use on all job-related travel. Failure to comply is met by a sequential, progressively more severe series of penalties, including dismissal for a fourth offense. Supervisors are also disciplined for the failure of their subordinates to use belts. They also are rewarded for exceptionally good accident and injury records. As with DuPont, Iowa DOT reinforces its program with educational presentations to employees and by an atmosphere which stresses the importance of safety in one's work. A 1980 survey of Iowa employees indicated a usage rate of 54 percent in official vehicles and 31 percent in privately owned vehicles (131).

4. Northwestern Bell

Operating in five States, Northwestern Bell is a large utility company with an extensive fleet, most of which is engaged in local driving. The company has a strong on-the-job policy which stresses use of belts on all company business (even when in the employee's own vehicle). Included in the program is a training element which includes defensive driving and emphasizes the benefits of safety belt use. A film entitled "Room to Live" is also shown during this training. Managers oversee the implementation of the policy (often riding with their employees) and are held responsible for the overall safety records of their unit of operations as well as for their own belt use and accident records. Unpublished estimates of the effectiveness of this policy are high. Spot checks by company staff have reported on-the-job usage rates greater than 90 percent.

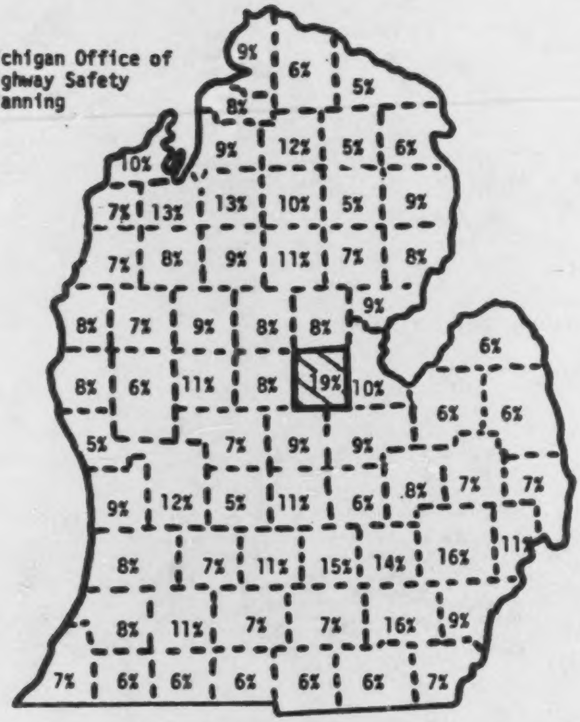
5. Dow Chemical

Dow Chemical is located in Midland County, Michigan, where it is the county's primary employer. Dow has long implemented a company policy concerning seat belt usage while on official business. In addition, Dow has engaged in considerable community public information efforts. A result of these efforts is that in 1980 Midland County had a 100 percent greater belt usage rate (approximately 19 percent) than did surrounding Michigan counties (8-10 percent). Figure 21 shows the 1980 average usage rates for counties in lower Michigan. Midland County is shown in dark outline. (Most recent observational studies have indicated a usage rate in Midland County greater than 23 percent.)

6. U.S. Air Force Bases

It should be noted that 60-90 percent usage figures have also been observed on a number of Air Force bases which have belt-use regulations and enforce them. Where such policies are not enforced, usage rates are significantly lower than where they are enforced.

Source: Michigan Office of
Highway Safety
Planning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9%
7%
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6%
6%
6%
7%

Figure 21
1980 Safety Belt Usage (%) in Lower Michigan by County

7. Safety Belt Use Policy Summary and Constraints

The costs associated with these programs can be relatively small, ranging from $2,000 to $20,000 per year. Most of the higher costs are associated with accompanying educational efforts, incentives, or rewards. These are minimal in comparison with the potential savings. The National Safety Council, for example, estimates that more workdays are lost in this country from motor vehicle accidents than from any other cause. An employer could make up the cost of a year's active belt use policy through the savings from only one accident.

The primary constraints on the implementation of company belt use policies include (a) company officials who are not convinced of the effectiveness of belts and belt use policies and (b) the availability of convincing data to persuade such officials that such activities are cost effective. Futhermore, many companies apparently do not keep records of accidents and costs associated with them at all. Among those which do, such records are often scattered among different company departments in different cities (151). More organized data collection, retrieval, and analysis systems would help companies document the savings which a safety belt policy would bring.

Plant safety consciousness is also critical. Those companies which have successful policies already have good records of safety emphasis. They hold regular safety meetings and often support positive incentives for employees as a reward for safe plant operation. Management is visibly supportive of general safety behavior and views the safety belt policy as only one of a number of company safety emphases.

Finally, cost is an issue. Belt use policies are seldom effective without comprehensive programs to back them up. Comprehensive programs can be expected to cost $2-20 thousand per year in a moderate sized company. However, if employer costs due to employee injuries from automobile crashes can be better documented and presented, these data should outweigh most of the obstacles that program costs present.

In summary, employer regulations and policies requiring safety belt use while on-the-job represent one of the more effective means by which many segments of the population can be reached and required to buckle-up (without requiring legislation). Usage rates of 60-90 percent have frequently been reported in such programs. This opportunity to initiate the development of belt usage habits is an important one and should be capitalized on.

E. Legislation Requiring Safety Belt and/or Child Restraint Usage

A decade of experience with safety belt usage laws around the world suggests that safety belt usage legislation offers considerable potential for increasing usage rates and for reducing deaths and injuries. It is also likely to be the most cost- effective highway safety countermeasure of all. As the 1976 Highway Safety Needs Study stated:

> The top ranking countermeasure, Mandatory Safety Belt Usage, has the potential to save 89,000 lives over the next ten years, at a cost of only $45 million. It thus requires the expenditure of only $506 for each fatality forestalled.

There have been a number of studies of foreign of safety belt usage laws some of the most often cited studies include:

o	1976	American Seat Belt Council (7)
o	1977	Ziegler (163)
o	1978	Robertson and Williams (114)
o	1979	NHTSA Task Force (71)
o	1980	Peat, Marwick & Mitchell (103)
o	1981	American Seat Belt Council (8)

1. Countries Having Safety Belt Usage Laws

According to the most recent survey by the American Seat Belt Council (ASBC), 29 countires or provinces now have safety belt usage laws (8). They include:

> Australia; Austria; Bulgaria; Belgium; the Canadian provinces of British Columbia, Ontario; Quebec, and Saskatchewan; Czechoslovakia; Denmark; Finland; France; Hungary; Ireland; Israel; Japan; Luxembourg; Malaysia; the Netherlands; New Zealand; Norway; Portugal; Puerto Rico; South Africa; Spain; Sweden; Switzerland; USSR; and West Germany (8).

The earliest of these laws were passed in the States of Australia from December 1970 through January of 1972, when a national safety belt usage law was passed for all of Australia. Japan also passed such legislation in December of 1971. Over the next three-year period (1972-74), four more nations and four Canadian provinces passed such laws.

By far, the greatest activity relative to the passage of such legislation came in the three-year period from 1975 through 1977 when 15 nations and four Canadian provinces passed safety belt use laws. A year later (1979) three more nations joined the ranks. In 1981, Great Britain also enacted such legislation. The legislative history from 1970 to 1980 is shown in Figure 22.

Sources: (7,8,71,103,163)

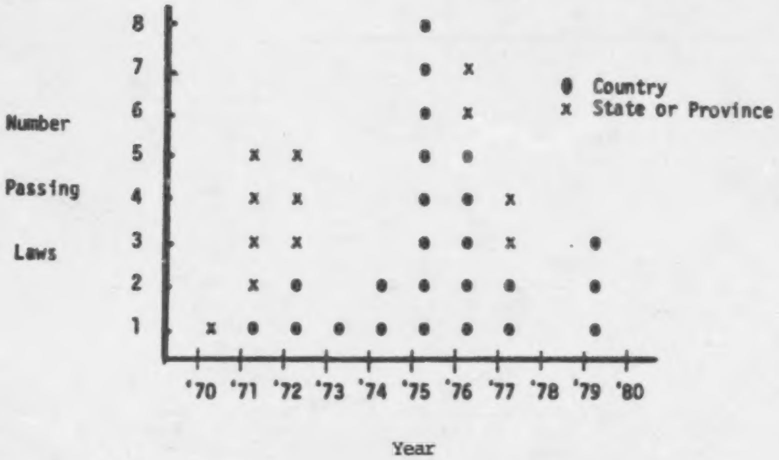


Figure 22
A History of Belt Use Legislation

2. The Effectiveness of Safety Belts Use Laws

We have had from five to ten years to observe the impact of safety belt use laws on increases in usage rates and on decreases in death and injury rates. One of the first reviews of such results of foreign legislation was by Ziegler entitled "Effect of Safety Belt Usage Laws around the World" (163). Table 17 summarizes some of the more complete data reported in this early study. Additional data from a later NHTSA study (103) are also provided to complete the information columns.

Table 17
An Early Summary of Effectiveness Data Concerning Safety Belt Usage Laws Around the World*

	Australia (All States)	France	Belguim	Canada (Ontario)
Date of Law	Jan. 1972	July 1973	June 1975	Jan. 1976
Penalty	$20 (max)	$20 (max)	$15 (max)	$100 (max)
Enforcement	yes	yes	(yes)**	yes
PI Program	yes	yes	(yes)**	yes
Usage (before)	25%	26%	(17%)**	17%
Usage (after)	68-85%	64-85%	92%	64-77%
Injury reduction	20%	32%	24%	15%
Fatality reduction	25%	22%	39%	17%

* Summary of all cases where effectiveness data was provided.
** Data taken from later study (103).

Source: Ziegler (163).

Overall, while claims of reductions of death and injury were as high as 39 percent, the average reported reduction was in the 15-30 percent range and resulted from an increase in usage rates in the 40-60 percent range. It was pointed out by this author that nations which enforced their law and provided penalties for non-compliance had higher usage rate increases (and thus greater decreases in deaths and injuries) than those which did not.

The next review was conducted during 1976 and reported by the American Seat Belt Council (ASBC) in August of that year. This report, entitled Seat Belt Use Laws Abroad (7), reaffirmed the position that where laws were enforced and where a penalty provision was included in the law, usage rates were significantly higher than in nations where this was not the case. This review concluded that safety belt usage increased by two to four times in all of the countries surveyed (including three which had no penalty provision).

During 1977, the NHTSA undertook a second review of the effectiveness of foreign belt use laws. The report issued in 1977 and updated in 1978 was entitled Task Force Report on Safety Belt Usage Laws (71).

One of the first aspects of belt use analyzed by the NHTSA report was the change in usage rates which resulted from the passage of foreign belt use laws. Prior to such laws, usage rates in most of these nations (or provinces) was generally in the 20-40 percent range. Where such laws were enforced, usage rates usually increased 2 to 3 times or 50-60 percentage points (i.e., an increase in usage from 20 percent to 70 percent usage is both a 250 percent increase and a 50 percentage point increase). Figure 23 illustrates the pre and post legislation usage rates of several of the nations reviewed in this report.

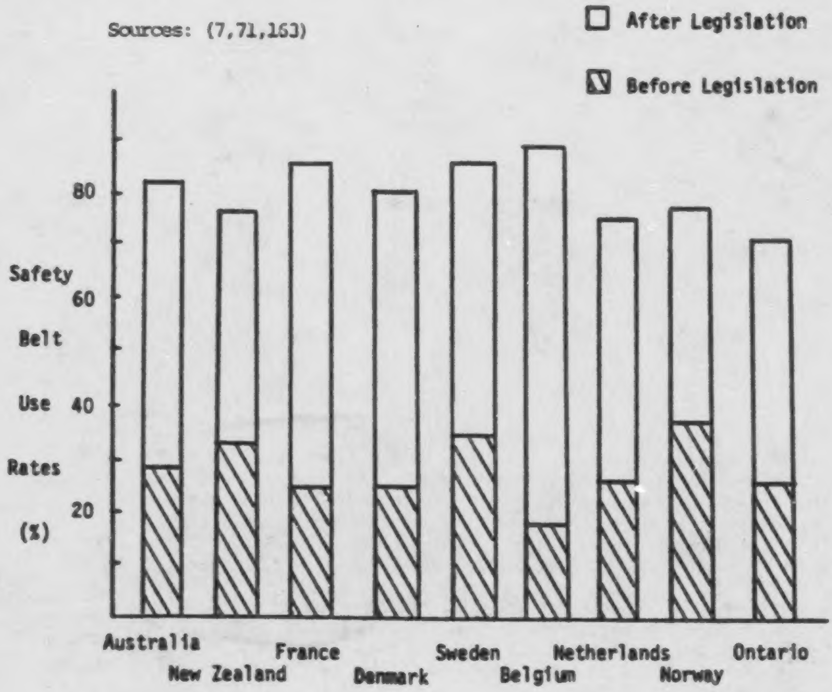


Figure 23
Safety Belt Usage Rates in Selected Nations Before and After Belt Use Legislation was Passed

On the issue of usage rates, the NHTSA Task Force Report also concluded that:

> ...most usage laws, if accompanied by a reasonably effective mass media campaign and an effective enforcement program, will result in an increase of at least 50 percentage points to a total of 70-80 percent usage.

3. Actual Versus Expected Effectiveness of Safety Belt Usage Laws

Another aspect studied by the Task Force Report was the extent to which expected reductions in injuries and fatalities (based on observed increases in belt usage) were realized. In summary of this examination it was observed that in some cases the actual reductions in fatalities and/or injuries were not as great as was predicted on the basis of usage rate increases alone.

A number of researchers (24, 71, 114) have suggested that differences between estimated and observed reductions may be due to the fact that higher risk drivers (e.g., drinking, drivers, multiple offenders, etc.) are the least likely to buckle-up and thus are last to be included among the ranks of belt wearers as usage rates increase. A second reason may be that the statistics provided often do not take into account the fact that the numbers of vehicles, drivers and crashes continue to increase each year. Also, usage rates usually refer only to front seat occupants. Finally, it must be considered that the driving environment is different in other countries. Factors such as more rural driving, higher speeds on rural roads and fewer emergency medical services can be expected to reduce estimates of the effectiveness of belts.

4. Summary of Findings of Reviews of Belt Use Law Effectiveness

Over the past five years, a number of reviews of the effectiveness of foreign safety belt usage laws have been conducted (7, 8, 71, 103, 114). While some have reported slightly different usage rate and fatality reduction effects for various nations, the results and conclusions have been reasonably consistent.

Figures 24 and 25 summarize the findings of these reviews in terms of usage rate increases and in terms of fatality and injury decreases, respectively. In general, the findings of these reviews have been that in nations which have passed and enforced a law requiring safety belt usage (usually for front seat occupants), the following have been observed:

- Pre-law usage rates of 20-40 percent
- Post-law usage rates of 70-90 percent
- Increases in belt usage of 40-60 percent
- Reductions in occupant deaths injuries of 15-30 percent

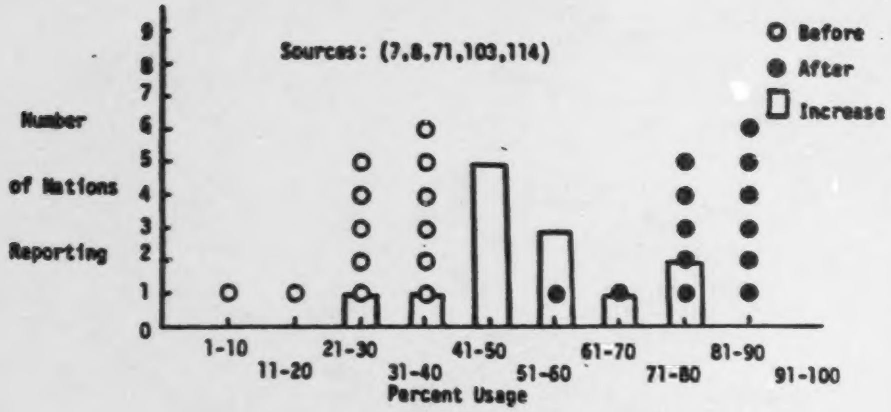


Figure 24
A Summary of Pre and Post Law Usage Rates and Usage Rate Increases for 14 Nations Passing Safety Belt Usage Laws

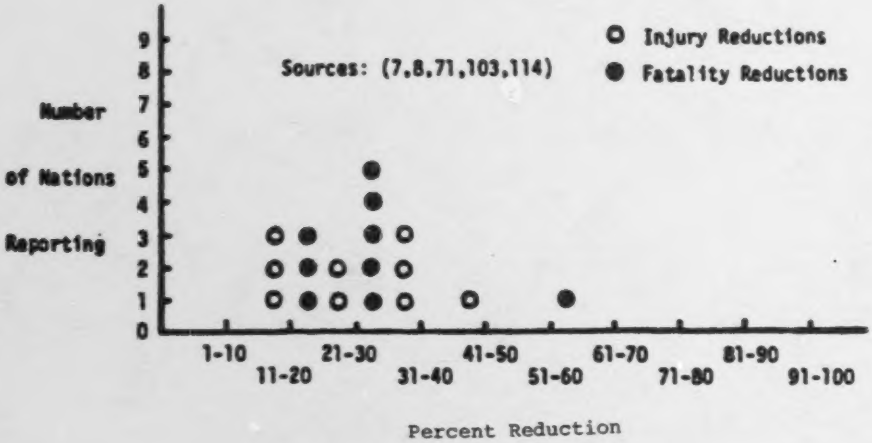


Figure 25
A Summary of Reported Decreases in Fatalities and Injuries for Nine Nations Passing Safety Belt Usage Laws

5. The Importance of Enforcement on Legislation Effectiveness: Canada and West Germany

The Canadian experience with regard to safety belt legislation deserves special mention, not only because Canada is the closest neighbor of the United States with safety belt usage legislation but also because of some unique problems in the Canadian implementation of usage laws. First, legislation was not enacted in all Canadian provinces. Only four provinces passed laws requiring the use of safety belts. Ontario was the first, passing legislation in January of 1976. It was followed by Quebec in August of 1976, and by Saskatchewan and British Columbia in 1977.

A recent report on the Canadian experience (129) indicated that the initial impact of the law on usage rates was substantial. For example, roadside surveys in Saskatchewan showed an increase in usage from approximately 26 percent to 80 percent, (an increase of over 200 percent or 54 percentage points).

Similarly, usage in Ontario increased from 17 percent, before the law, to 77 percent, one month after the law (an increase of over 350 percent or 60 percentage points). No similar increases occurred in jurisdictions where no such legislation was enacted.

The initial increases in Ontario were in large part due to intensive enforcement which was apparently not sustained after passage of the law. As a result, usage declined steadily to a low of 48 percent, 17 months after legislation. Usage rates in Saskatchewan also declined after legislation from a high of 90 percent to approximately 65 percent, one year later. The Canadian report(129) concluded that sustained enforcement was essential to maintain usage rates at the substantial levels obtained immediately following legislation.

Most studies also suggested, however, that enforcement of belt use laws is not particularly difficult and that initial losses due to a lack of enforcement can be regained over time. In the case of the Federal Republic of Germany, for example, usage rates have been maintained at moderately high levels despite a drop in usage following the levels reached immediately following legislation (103). Figure 26 illustrates the dip in usage rates following an initial post-legislation increase and the subsequent recovery of high usage rates over time.

Sources: Seidenstecker (123)
Peat et al. (103)

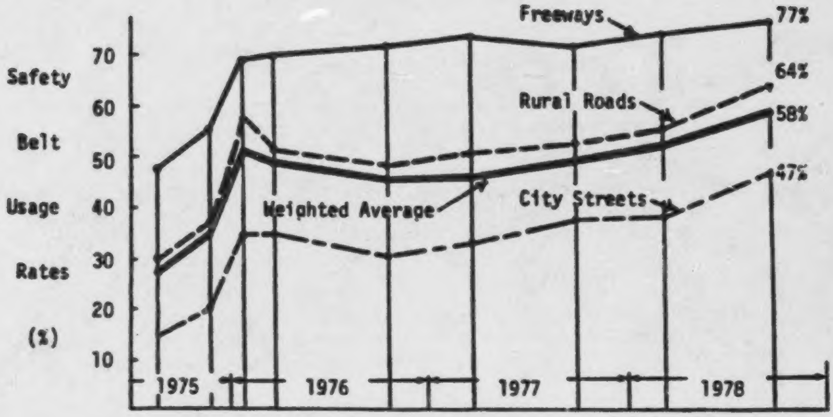


Figure 26
Safety Belt Usage Rates in the Federal Republic of Germany

The 1980 NHTSA review entitled Effectiveness of Safety Belt Usage Laws (103) concluded the following relative to enforcement and the success of foreign belt use laws:

- In almost all countries it was found that the seat belt law was not enforced independently of other traffic infractions. It is almost always enforced only as an ancillary action in connection with some other traffic violation.
- Enforcement of seat belt laws appears to be essential to a high seat belt usage rate. In several countries it was determined that the usage rates were usually associated with stringent enforcement. However, in some cases it did appear that the people's cultural propensities for being highly law abiding obviated the need for stringent enforcement.
- Studies in virtually all countries revealed that the seat belt usage rates rise 200 to 300 percent immediately after the seat belt law becomes effective. The rate subsequently drops as much as 10 to 20 percentage points and then rises to some plateau, depending on the amount of attention and enforcement provided by government officials.

Clearly, these findings paralled the findings of all the previous reviews cited (e.g., Ziegler (163), American Seat Belt Council (7, 8), and NHTSA (71)).

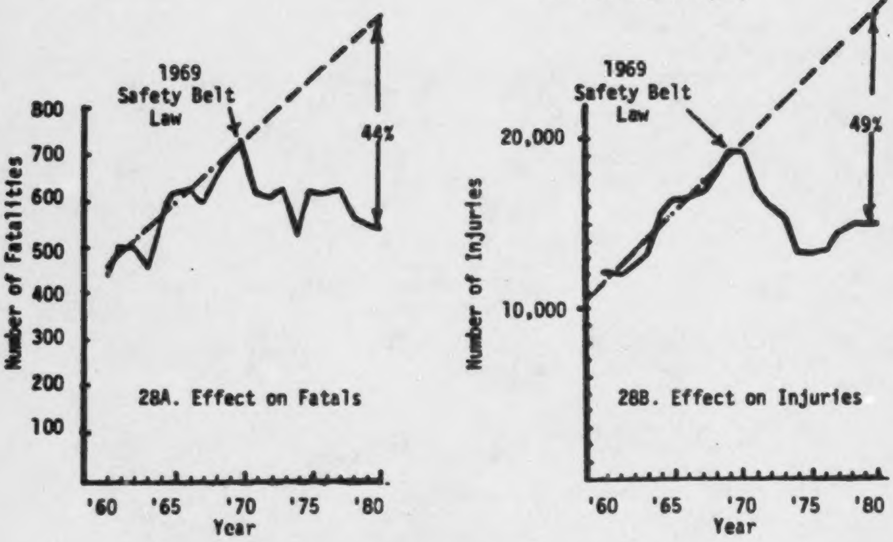
6. An Example of Reductions in Fatalities and Injuries as a Result of Safety Belt Usage Legislation: Victoria, Australia:

The Australian experience is perhaps the most often cited success story for belt usage legislation. For that reason, it would be useful to review some of the most recently reported data from that country, especially from the State of Victoria (65, 103).The State of Victoria introduced the seat belt usage law one year before any other State in Australia. In the cities, the usage rate rose to 75 percent (in those cars which were fitted with belts) and to 64 percent in the country. This compares with a usage rate of about 18 percent before legislation (65). The usage rates increased over the succeeding years and are presently greater than 90 percent in metropolitan areas and greater than 80 percent in rural areas.

During the first year, 1971, fatalities to drivers and to passengers of cars in Victoria dropped from the 1970 level by 15 percent and 19 percent, respectively. In the remainder of Australia the change was 2 percent and 0 percent respectively. During the same year, injuries to drivers and passengers in Victoria dropped by 14 percent and 10 percent, respectively. The change in the reminder of Australia was an increase of 2 percent and 0 percent, respectively. There was little doubt that these significant reductions were due to the belt use law (65).

This reduction in death and injuries to drivers and passengers of cars has continued. Figure 27a shows the actual number of vehicle occupants who were killed annually. The dotted line represents the expected increase in deaths based on predictors of number of vehicles, fuel consumption and population. The percent reduction from the expected trend in vehicle occupant deaths is shown by the figure. The number of vehicle occupants injured also dropped remarkably below the expected trend as shown in Figure 27b (65).

As can be seen from these figures, when projected increases in crashes due to increases in the number of drivers (and driving) are taken into account, overall reductions in deaths and injuries from baseline data are even greater than when such projected increases are not taken into account.



Source: Joubert (65)

Figures 27a and 27b
Reductions in Fatalities and Injuries in Victoria, Australia
as a Result of Mandatory Safety Belt Usage Legislation

7. Examples of Reductions in Specific Injuries and/or Costs.

Relative to reductions in specific types of injuries and costs, following are statements made by officials of various nations in response to the 1981 American Seat Belt Council Survey entitled International Seat Belt and Child Restraint Use Laws (8):

a. Canada

In 1976, the first year of the law's operation, the Ontario Government compared health care costs from highway accidents with the previous year and discovered the following:

- The cost of active treatment care for hospitalization victims declined by 10.7 percent, a savings of nearly $2 million.
- The number of hospitalized victims decreased by 13.7 percent.
- The number of in-patient victims declined by 21.6 percent.
- The number of victims requiring out-patient care dropped by 14.7 percent.
- Minor injuries were reduced by 13 percent, moderate to severe injuries by 14.5 percent.
- The average treatment cost for accident victims wearing seat belts was $228, for unbelted victims $419.

b. The Netherlands

A very important conclusion is the pronounced absence of skull and brain injuries among seat belt users... The fact that these injuries occur less among seat belt users explains to a large degree the great, already mentioned, effectiveness of all three types of seat belts (8).

c. Sweden

The effects of seat belt use also have shown up in reduced medical costs. A recent study by the University of Stockholm found the belt law saves Sweden between $22 and $45 million annually in reduced medical and other societal costs. It also reported Sweden receives a return of three to four krona for every one invested in public information campaigns and enforcement programs related to seat belt use.

Seat belts are effective in reducing medical costs because they cut by at least one-half the severity of injuries to the skull, face, throat, chest, and pelvis. They prevent many more injuries to the abdomen, arms, and legs. One group of Swedish researchers, after reviewing the evidence, concluded, "Traffic accident injuries to seat belts users are always less severe than if no belt has been used." (8)

Child Restraint Legislation

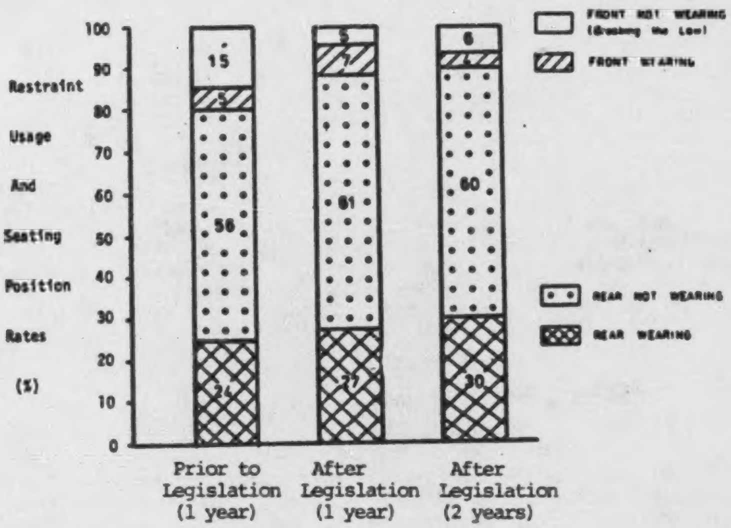
1. Foreign Experience

The 1981 survey by the American Seat Belt Council (8) indicated that child restraint legislation has lagged behind safety belt usage legislation in most foreign nations. In such countries the only mention of children in belt use laws is usually in the form of exempting them from the requirements of the laws. Many foreign countries, however, require that children ride in the rear seat.

Only in Australia and in the Canadian Province of Saskatchewan is legislation currently in effect which requires the use of child restraints. In Saskatchewan, the legislation is too recent (June 1980) to have been evaluated.

In Victoria, Australia, however, child restraint legislation has been in effect since 1976. It requires that children under age 8 be restrained by a proper child seat restraint or be in the rear seat. As a result of the legislation, the average usage rate of children (in the front seat) increased from 25 percent to approximately 70 percent (an increase of 180 percent or 45 percentage points). The legislation also increased the proportion of children riding in the less dangerous rear seating position from 79 percent to 85 percent. However the majority of those in the rear seat (67 percent) remained unrestrained (148).

Within 2 years, 90 percent of the children were observed to be riding in the rear seat and only 10 percent were in the front seat. Still, only 33 percent of those riding in the rear were restrained, while 67 percent of those in the front seat were restrained. Figure 28 shows the results of the law on seating position and usage rates.



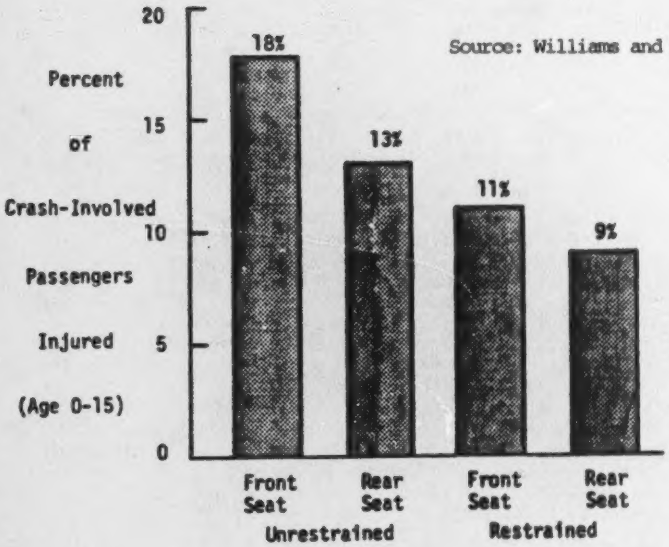
Source: Vulcan (148)

Figure 28
Seating Position and Restraint Usage Rates
for Children Under Age 8 in Victoria, Australia

During the first full year following the legislation and the changes in seating position and usage rates described, child passenger casualties dropped by 11 percent in Victoria. However, since the total number of child passenger casualties had been decreasing somewhat since 1971, it is not exactly clear how much of the decrease was due to the law.

The overall increase in child restraint usage in Victoria was modest, from 34 percent to 41 percent (a 20 percent or 7 percentage point increase). While this is not dramatic, the combination of (1) more children riding in the less dangerous rear seat (70 percent before the law versus 90 percent after the law) and (2) proportionately more of those children who are riding in the more dangerous front seat being restrained (25 percent before the law versus 67 percent after the law) should not be underestimated.

The importance of riding in the rear seat has been shown by studies in the United States. Figure 29 shows the effect of both seating position and restraint usage for children under age 15 in terms of injuries (159).



Source: Williams and Zador (159)

Figure 29
Automobile Crash Injury Rates for Children Under Age 15 by Seating Position and Restraint Use.

2. U.S. Experience

In the United States, there has recently been considerable activity in the area of child restraint legislation. The first State to pass such a child restraint use law was the State of Tennessee in 1978. Since that time, 10 additional States have passed some form of child restraint legislation. A number of additional States are also considering such action.

A 1981 National Safety Council report (92) summarized the recent child restraint legislative activity as follows:

> Over 100 pieces of legislation relating to Child Passenger Protection were introduced in 41 States in this year (1981), in what was clearly, a successful drive to stem the injury and death rate of children less than 5 years old from automobile crashes. New York, Michigan, North Carolina, and Maine are the most recent additions to the list, having passed legislation in mid-summer. These efforts came on the heels of earlier successes in West Virginia, Minnesota, and Kansas as well as amendments strengthening existing laws in Rhode Island and Tennessee. Adding Virginia's resolution to disseminate educational materials and California's education bill, passed in late 1980, brings the number of States who have taken positive action up to 11--and the story is not yet finished for this year. Several States California, Massachusetts, New Jersey, Ohio, Pennsylvania, and Wisconsin still have bills pending before the legislatures; some with excellent chances of passage before the year is out.

States which have passed child restraint legislation are: (1) Tennessee; (2) Rhode Island; (3) California; (4) Maine; (5) West Virginia; (6) Minnesota; (7) Kansas; (8) Michigan; (9) New York; (10) North Carolina; and (11) Virginia (joint resolution).

Most of such laws have not been in effect long enough to be evaluated. However, the Tennessee law has received considerable evaluation effort (105). The results of such evaluation (see table 12) indicate that the Tennessee law (along with the public information program which accompanied it) has increased overall child restraint usage in the State from 9.2 percent in 1977 to 18.7 percent in 1979 (an increase of 103 percent or 9.5 percentage points). In urban areas, usage of child restraints increased from 11.8 percent in 1977 to 22.9 percent in 1979 (an increase of 94 percent or 11.1 percentage points).

While these initial increases were not dramatic, usage rates have continued to increase in the State. The most recent surveys conducted in Knoxville and Nashville have reported usage rates of nearly 30 percent. This represents an increase of more than 200 percent or 20 percentage points from 1977 usage rates. Enforcement of the law appears to be a major factor contributing to the increased usage since 1979 (113).

At this point, the impact on deaths and injuries is not clear. On the one hand, all of the child passenger deaths investigated over the two-year period following implementation of the law involved unrestrained children. Additional comparisons of major injuries received by unrestrained versus restrained children (see table 5) have indicated that the use of child restraint devices reduced death and injury by 50-70 percent, when they were worn (105). On the other hand, due to the fact that only about 9 percent more children were restrained in 1979 than in 1977, an impact was not reflected in terms of an observed reduction in overall child passenger injuries and deaths in the State. Such an impact should be observable (in terms of reductions in injuries) when usage rates in the 40-50 percent range are obtained.

In the meantime, Tennessee should be regarded as a pioneer State in the promotion of child restraint laws. While young child passengers account for only about 2.5 percent of all passenger car fatalities, more than 700 are killed and many thousands more are injured each year in traffic crashes. This makes automobile crashes the leading killer of young children. The ever-increasing use of child restraints can reduce this total and in the process of doing so, it can reopen the possibility of protecting the much larger number of adult passengers by means of safety belts.

Safety Belts and Child Restraint Legislation Summary and Constraints

1. Summary

Legislation is this area is a matter of State choice and responsibility. While the potential for safety belt and child restraint usage laws to reduce death and injury is clear, successful legislative efforts are not likely to occur without other supporting measures such as public information, education and incentive programs. Legislation in foreign countries has resulted in usage rates as high as 70-90 percent and reductions in death and injury ranging from 15 30 percent.

2. Constraints

The obvious constraints involved with safety belt (and child restraint) legislation efforts are the difficulties involved in (1) educating the public, and (2) developing positive attitudes towards the need for restraint use.

a. Background

In the United States, considerable legislative activity was stimulated in 1974, when the Congress provided an incentive program to the States to pass safety belt usage laws. More than half of the States introduced such bills into their legislatures in the year that followed. Following the discontinuance of this program, the States reduced their safety belt legislative efforts. The repeal of the interlock rule in 1974 and the repeal of several State motorcycle helmet laws from 1976 to 1978 also greatly increased the resistance to mandatory approaches among State legislators.

b. Attitudes

The foreign experience has been somewhat more positive. The 1980 NHTSA study entitled Effectiveness of Safety Belt Usage Laws, (103) indicated that in most of the nations which have passed safety belt legislation, the majority of the public approved of such laws. In some cases such attitudes had been brought about by several years of public information efforts.

One notable exception was in the case of Ontario, Canada. When the belt use legislation was passed in January of 1976, telephone survey data suggested that only about 48 percent of the populace were in favor of such a law. However, public information efforts following passage of the law resulted in a majority favoring the law. These surveys indicated that 60 percent of the public favored the law by October of 1976 and 72 percent favored the law by May of 1977 (73).

In the United States, the situation relative to attitudes towards safety belt laws is similar to that in Ontario. While there appear to be no strongly polarized factions against such laws, most of a number of national polls conducted since 1976 have indicated that the majority of the populace has not favored such laws.

Table 18 shows the results of such surveys. These data suggest that a voluntary public information, education, and incentive program would be the most desirable approach to pursue in this country at the present time.

Table 18
Results of National Surveys of Attitudes
Toward Safety Belt Use Laws

Year	Pollster	% in Favor of Laws	% Against Laws
1976	Yankelovich, Skelley and White (162)	29%	66%
1976	Insurance Institute for Highway Safety (115)	47%	50%
1977	American Automobile Assn. (5)	41%	47%
1977	Gallop (41)	17%	76%
1978	Peter Hart and Associates (51)	39%	57%
1978	Tecknekron (136, 137)	54%	45%

In 1977, the University of Michigan's Highway Safety Research Institute prepared a review of the literature for the NHTSA concerning attitudes towards safety belt usage laws (48). This review indicated that the usual negative reasons for not approving of safety belts come up time and time again. These include:

- the disbelief that belts actually protect you in a crash;
- the discomfort and inconvenience of safety belts; and
- the idea that belts can trap you in a crash.

The report also pointed out that Canadian and Australian studies generally show approval of such laws with approval increasing after their enactment. This review suggested that public information campaigns are needed to change the public's attitude towards safety belt usage legislation.

Nearly all reviewers of safety belt usage laws have pointed out the importance of substantial public information and education programs prior to the pursuit of such legislation. Most such reviews have also pointed out the need for significant elements of society such as physicians, auto clubs, and the media in order to gain passage of such legislation.

c. Child Restraint Laws

As Tennessee and other States have discovered, there are many obstacles to the passage of child restraint legislation as well. Some opponents of such legislation feel that it is an unwarranted intrusion into the family. This feeling was, in large part, responsible for Tennessee's "baby crusher" clause which allowed for a child to be carried in the arms of an adult. This clause has since been removed from the Tennessee Law.

As in the safety belt area, to gain passage of a State child restraint law, the cooperation of many proponents is needed. Both pediatricians and the police have been found to be effective spokespersons, as are hospitals, PTA's, Jayceettes, Red Cross workers, etc. Loaner, rental, and discount sales programs can, to a large part, overcome cost arguments. Still, however, if the Tennessee experience is typical, usage rates will not automatically increase to 80-90 percent levels. Public information, education, and enforcement will be required to raise usage rates to levels which can result in documented reductions in death and injury.

V. Approaches Suggested by Past Studies for Conducting Voluntary Usage Programs

Suggested approaches for increasing voluntary safety belt and child restraint usage have come from a number of sources. While the foreign safety belt experience has suggested that legislation is likely to be an efficient and effective method for increasing usage rates, even this experience suggests the need to begin the process with comprehensive public information and education programs. Some recent studies which provide suggestions for future voluntary use progams include:

- 1977 Market Opinion Research (78)
- 1979 National Academy of Sciences (140)
- 1980 National Academy of Sciences (141)
- 1981 Tarrance and Associates (134)

In addition to the above studies, suggestions were provided by the series of safety belt and child restraint workshops conducted by NHTSA in 1979, 1980 and 1981.

A. The Need to Target Different Groups

Both the 1977 Market Opinion Research (MOR) Study and the 1981 Tarrance and Associates Study suggested that primary emphasis must be placed on the substantial percentage of drivers who are low to moderate users and who thus already have a partially developed safety belt use habit. However, both studies emphasize the need to target many different segments of the population. The MOR study, for example, also emphasizes the need to address adolescent drivers. Both studies suggest a strong appeal aimed primarily at the responsibility and authority of drivers to get their passengers to buckle-up. (Many foreign nations hold their drivers responsible for their passengers' safety.)

B. The Need for Organizational Networking

Nearly all prior studies (and the NHTSA workshop series) have suggested the need to work more closely with other networks and organizations at the Federal, State, and local levels. Both National Academy of Sciences studies emphasized this point. The 1979 study which reviewed NHTSA's 1980 program plans in this area (140) put it this way:

> "... one factor will ultimately determine whether the use of restraints increase significantly and permanently: that is, the degree to which all levels of government, business, health-care professionals and institutions, and community organizations devote their energies and resources to positively influencing people's behavior. States, then should concentrate on motivating these groups and on helping them obtain appropriate information and education materials. States also should coordinate and evaluate the overall effort to encourage restraint use."

The report also stated:

> "Part of NHTSA's (1980) Occupant Restraint Plan reflects its traditional tendency to communicate with individual drivers. The workshop suggested that the emphasis should be on changing the practices and policies of existing institutions so that they do an effective job of encouraging individuals to use their seat belts. These institutions need to perceive that the non-use of seat belts is a problem they can help solve."

C. Summary of the 1979 National Academy of Sciences (TRB) Report Recommendations

In addition to emphasizing the need for working with a multitude of organizations and institutions, the 1979 National Academy of Sciences Study made the following recommendations:

(1) Place emphasis on child restraint programs.

There usually is a positive response in this country for activities and ongoing programs that will protect children. Most parents have never been informed about the dangers children are exposed to in motor vehicles or about how best to protect them; these parents would welcome such information. In this area there is no "wall of negativism" to overcome as is the case with adult use of safety belts. Emphasizing child restraint programs could lead to dramatic progress in involving large segments of society in occupant protection activities, and this may lead to broader support for protecting all vehicle occupants.

(2) Develop Economic Loss Data.

A possible major reason that governments and businesses have never made a significant effort to increase restraint usage is that there are no data systems to describe accurately the economic losses these institutions (and their taxpayers or stock holders) suffer as a result of the nonuse of restraints both on and off the job.

(3) Conduct Workshops for Target Groups.

Workshops on the importance of seat belt use could be offered as part of national or regional conferences of professional, business and governmental associations and in specially scheduled regional meetings in cooperation with NHTSA regional offices. Another possibility would be to provide Governors' highway safety offices with the assistance they need to stage their own workshops.

(4) Counter Negative Impact of Media Programming.

Television and motion pictures rarely show situations in which adults use restraints properly and young children do not appear in proper restraint devices. Further, unrestrained actors are shown surviving wild rides and crashes without a scratch. (NHTSA needs to find ways to counter such programming practices.)

The following messages were suggested by workshop members as potential ways to use the television and radio media:

- To parents, asking if they know how their children are being transported by the schools, describing the dangers, urging their local involvement to achieve restraint policies and educational programs to teach kids safe riding habits.
- To doctors, asking what they are doing about the number one health problem for children and adults, suggesting things they can do, where they can get information.
- To taxpayers, asking if they know how much of their social security deduction and State Welfare budget goes for crash victims who did not wear restraints and for the families of those people, urging them to urge their friends to buckle up and save money.
- To taxpayers, asking if they know how many State employees are injured while riding unrestrained on State business and how much money is lost as a result, suggesting they support educational programs and (belt) use requirement policies.
- To business managers and owners, asking if they know what portion of their operating expenses goes for employees injured or killed, on or off the job, because restraints weren't used, suggesting the need for effective data systems, education programs, belt use policies, describing where to get help.
- To all adults, telling of the danger of transporting young children unrestrained, suggesting legal actions to help protect all children.

D. Summary of the 1980 National Academy of Sciences Report Recommendations

The 1980 National Academy of Sciences Study (141), which was mandated by the Congress in 1979, made the following recommendations to the States and to the Federal Government:

(1) Enact Child Restraint Laws.

The States should enact child and youth occupant restraint laws: The Federal Government should offer technical assistance and incentives ...

(2) Issue Belt Use Requirement Policies.

The Federal Government, in its own activities should provide an example of compulsory safety belt use. Federal agencies should require and enforce on-the-job safety belt use ...

(3) Develop More Effective State 402 Programs.

States should make more productive use of the Federal assistance funds set aside for safety belt programs. The Federal Government should provide more detailed guidance ...

(4) Identify Economic Costs of Belt Non-use.

The economic costs of not using safety belts should be identified and publicized among the groups that mainly bear those costs. The Federal Government should conduct studies ... (and) ... educate the public ...

(5) Comprehensive Employer Belt Usage Policies.

Employers should require on-the-job safety belt usage by their employees. The Federal Government should develop and test model safety belt use programs.

(6) Identify Crash Deaths and Injuries as a Major Public Health Problem.

Traffic crash injury and death should be recognized as a major public health problem ... the Federal Government should involve its health agencies, as well as its traffic agencies, in safety belt programs.

In addition to the above points, the later NAS Study (141) emphasizes the need to explore, develop, and implement incentives for safety belt usage both from an organizational (economic) standpoint and from an individual (reward) standpoint. The report stated that incentives should be considered as an inherent part of any employee safety program and that incentives should be provided to the States to conduct safety belt programs. Finally, primary organizations or networks within the State which were suggested for emphasis included: (1) schools; (2) health care systems; and (3) the media.

E. Summary of 1977 MOR Study Findings Relative to Approach

Another voluntary use approach aimed primarily at different seat belt user types was suggested by the 1977 MOR Study (78). This study suggested aiming different media messages to different groups of belt users (or non-users) such as:

(1) Total drivers
(2) Confirmed belt users
(3) Moderate belt users*
(4) Non-users and
(5) Adolescents

Table 19 summarizes the various attitudinal approaches which appeared to relate most to usage rates within these groups.

Table 19
Attitudinal Factors Related to Belt Use
Among Various Belt User Types

Importance	Total Drivers	Confirmed Users	Moderate Users	Infrequent Users	Adolescents
First	Seat Belt Affect	Fear of Entrapment	Seat Belt Affect	Seat Belt Affect	Seat Belt Affect
Second	Fear of Entrapment	Worry About Accidents	Fear of Entrapment	Worry About Accidents	Fear of Entrapment
Third	Fear of Major Accidents	Careful Driving Habits	Careful Driving Habits	Fear of Entrapment	Careful Driving Habits

The MOR study concluded that actual safety belt use is a direct function of: (1) an individual's general affective attitude; (2) driver interactions with other adults and teenage passengers, and (3) the propensity to use seat belts. This suggests three important approaches for programs to increase seat belt use:

(1) Develop a framework which is based on information which demonstrates the necessity of safety belts in defining what makes a good driver.

The factual evidence that safety belts reduce accidents is important, but demonstrating to the moderate and non-user that the image of a safety belt user is that of a secure driver with good judgement seems to be the key image the confirmed user has.

(2) Encourage the driver, through his or her authority position, to be responsible for the safety belt use of others in the car.

It is necessary to demonstrate this authority and responsibility position in any messages (mass media or otherwise) about safety belt use. Simply stating, "You are responsible for others" would lack the necessary context of the actual driving experience. Placing the authority/responsibility in actual driving situations is critical for demonstrating to moderate and non-users the content and importance of such interactions in terms of overall driving behavior.

(3) **Make fastening the safety belt an integral part of the trip start-up procedures**

Structural factors like the interlock system impose such (perceived) severe restraints on drivers that defeating such systems becomes the norm (although belt use clearly increases). However, constant reinforcement of the idea that putting on safety belts (like turning on an ignition) is part of normal driving procedures will increase belt use.

Some additional findings of the study which should be capitalized on when planning a voluntary belt usage program include the following conditions under which various users types were found to use belts most often:

(1) **Non-users** were sometimes found to wear belts when they:

- are in sports cars
- perceive belts are comfortable
- have a positive affect (attitude)
- do not feel trapped
- perceive that the weather is bad
- buy a new car
- have had formal driver education
- fasten their belts as one of the first steps

(2) **Moderate users** were found to use belts more frequently when they:

- drive subcompacts
- feel belts are not inconvenient
- have positive affect (attitude)
- do not fear entrapment
- interact as drivers to passengers
- perceive that the weather is bad
- buy a new car
- fasten their belts as one of the first steps

(3) **Confirmed users** were found to use belts most frequently when they:

- drive sports cars
- interact with children about belts
- have had formal driver education

(4.) **The total population of drivers** was found to use belts more often when they:

- drive small cars
- feel belts are necessary
- do not fear entrapment
- interact with children
- buy a new car
- have had formal driver education
- buckle up as a first step

F. Summary of the 1981 Tarrance and Associates Report Recommendations

Finally, the most recent study conducted for NHTSA to suggest potential approaches for voluntary safety belt use programs (134) made the following recommendations:

- The American adult population identified in the study as "sometimes users" and "infrequent users/likely to change" should be the major target groups of seat belt use media campaigns.
- Seat belt media campaigns should avoid straight information (statistical) themes.
- Seat belt use media campaigns should attempt to increase feelings of responsibility for seat belt use on the part of a vehicle's driver.
- The economic benefits which accrue from the cost of fastening one's seat belts should be emphasized in seat belt media campaigns.
- Seat belt media campaigns should emphasize the benefit-to-cost ratio operative at the moment of decision when an individual first sits in a vehicle. The three major benefits to be stressed should be: (1) avoidance of hospitalization and injury, (2) avoidance of being killed, and (3) avoidance of the "second collision."
- Seat belt use media campaigns should not be targeted at any one or two specific demographic or geographic groups.
- Seat belt use media campaigns must dispel the validity of the "trapped" myth, while at the same time avoiding "implanting" or suggesting it to individuals who may not have thought of it.

G. Overall Summary of Recommendations

In summary of these and other studies which have been conducted it appears that some of the more important considerations for any national effort to increase voluntary safety belt or child restraint usage are:

(1) **Many other groups and organizations have to be involved**, in the delivery and implemenation of educational, incentive and belt use policy programs.

(2) Automobile deaths and injuries must be perceived by the American public as **a public health problem**.

(3) The interest in **child passenger protection** should be capitalized on.

(4) **Economic costs** of belt non-use must be documented and presented in an effective manner to organizations and to the American public.

(5) **Incentives** must be provided to organizations and individuals to encourage increased belt usage.

(6) **Public information, education, incentive and belt use policy programs must be combined and implemented on a large scale over long periods of time by "networks" of organizations.**

(7) Many **different target groups** must be addressed in safety belt and child restraint messages and programs.

(8) A program based on **voluntary safety belt usage** must be undertaken before any serious interest can be given to a mandatory safety belt usage program.

VI. The NHTSA Safety Belt and Child Restraint Promotion Plan

A. Background

Based on these recommendations, NHTSA is implementing a comprehensive effort to increase safety belt and child restraint usage. This effort involves: (1) media programs; (2) educational (and incentive) networking efforts; (3) encouragement of organizational belt usage policies; and (4) research, development, and evaluation.

B. Goals and Elements

The goals of the program are to increase knowledge and positive attitudes toward safety belts and child restraints and to increase safety belt and child restraint usage rates in the States.

The elements of the program are: (1) to reach the majority of the public; (2) to inform them about the need for and effectiveness of safety belts and child restraints; (3) to persuade them to use their safety belts and/or child restraints (and to get others to do the same); and, (4) to reinforce such messages and efforts with constant reminders from many sources.

C. Networking

In the educational and incentive area, which constitutes a large portion of the program, efforts will be made to contact the national level associations for: (1) educational; (2) health; (3) medical; (4) civic; (5) safety; (6) business; (7) corporate; (8) government; (9) military; (10) insurance; (11) law enforcement; and (12) media networks to enlist their aid in promoting safety belt and child restraint programs among their State and local affiliates. In some cases, audiovisual and print materials will be supplied to such organizations to conduct these efforts. Some examples of how the program is expected to work are as follows:

(1) Educators: Elementary, high school, and driver education teachers will be provided curriculum units including audio-visual programs and will be urged to teach the dynamics of crashes and the effectiveness of safety belts and child restraints in classes.

(2) Health Care Professional Groups: Physicians groups will be asked to talk to patients on the need for safety belts and child restraints and work with hospitals and health clinics to educate patients. They will also be encouraged to exhibit community leadership through working with the media, public speaking, and endorsing child seat loaner programs.

(3) Civic, Service, and Safety Groups: There are a number of civic, service, and safety groups which are receptive to the need for increasing safety belt and child restraints usage. Most of these groups have a national association and a State (and local) affiliate network. Such groups

will be asked to promote safety belts and child restraint usage among their members through educational and incentive programs for the general public.

(4) **Employers (private, government, military):** The corporate network has one of the greatest potentials for increasing safety belt and child restraints usage, largely because of the great numbers represented by their employees. Private companies and corporations will be asked to adopt programs to educate their employees on the benefits of restraint usage and to establish belt usage policies for company employees.

Federal and State governmental agencies will be asked to establish policies requiring belt usage by their employees while they are on official business and to provide educational programs encouraging employees to use seat belts and child restraints at all times.

Motor vehicle accidents are the number one killer of military personnel during peace time. The military establishment will be asked to implement and enforce seat belt usage regulations applicable to all persons entering, while on, and leaving military posts, and to implement educational programs on safety belts and child restraint usage for military personnel, their dependents, and civilian employees.

(5) **Auto Companies and Trade Associations**: Safety should be as saleable as fuel economy. Auto manufacturers have advocated the use of safety belts for a number of years. As with other networks, auto companies and their trade associations will be asked to participate in the design of national public information programs. They will also be asked to influence their dealers to participate in safety belt and child restraint promotional efforts.

(6) **Insurance Companies**: Insurance companies will be asked to educate their policyholders and to explore the possibility of providing economic incentives in the form of reduced premiums for safety belt use. They will also be asked to participate in nationwide public information and education programs.

(7) **Law Enforcement Officials**: Police agencies will be asked to regularly report the use or nonuse of safety belts in crashes and to advocate the wearing of belts in their normal enforcement activities. Judges and lawyers will be asked to consider reduction in penalties where belt usage is involved and to re-examine the concept of contributory (or comparative) negligence where nonbelt usage is involved.

(8) **Electronic and Print Media**: The electronic media will be solicited to promote safety belt and child restraint usage. This includes public service time, talk shows, and special events. Top rated will be asked to explore this important societal problem as a potential theme in a programming efforts.

The print media will be solicited primarily through the editors and publishers of major magazines and newspapers to include safety belt usage information in the reporting of automobile crashes and to provide space for public service messages.

D. State Offices of Highway Safety

Perhaps the most important network through which NHTSA must operate is the network of State Offices of Highway Safety through which all Federal 402 funds are spent. Many of these State offices are already conducting "networking" efforts of their own in the child restraint area. To the extent that NHTSA can provide technical guidance and materials, and to the extent to which these State officials can coordinate and support those activities and materials being distributed through national organizations, the program will be successful. Figure 30 shows an example of how the NHTSA and the State offices of highway safety can interrelate with various organizational networks.

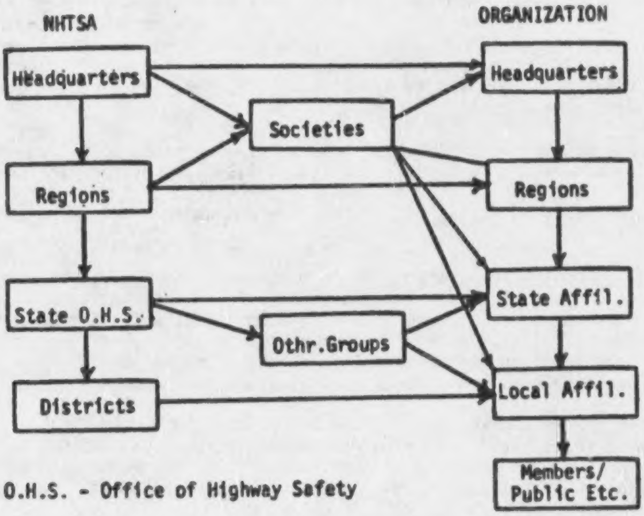

NHTSA
ORGANIZATION
Headquarters
Headquarters
Societies
Regions
Regions
State O.H.S.
State Affil.
Othr.Groups
Local Affil.
Districts
Members/
Public Etc.
O.H.S. - Office of Highway Safety

Figure 30
An Example of How Federal and State Highway Safety Agencies Must Interact With Organizational Networks

E. Message Development

Based on the motivational research cited in the body of this report, messages will be developed for distribution to both the educational and the mass media networks. These messages will be targeted for different segments of the population and will include such topics as: (1) function and/or effect of belts and child restraints; (2) status of highway crashes as a public health issue; (3) a driver's responsibility to his or her passengers, etc. An example of the development of messages for both networks and media purposes is shown in Figure 31.

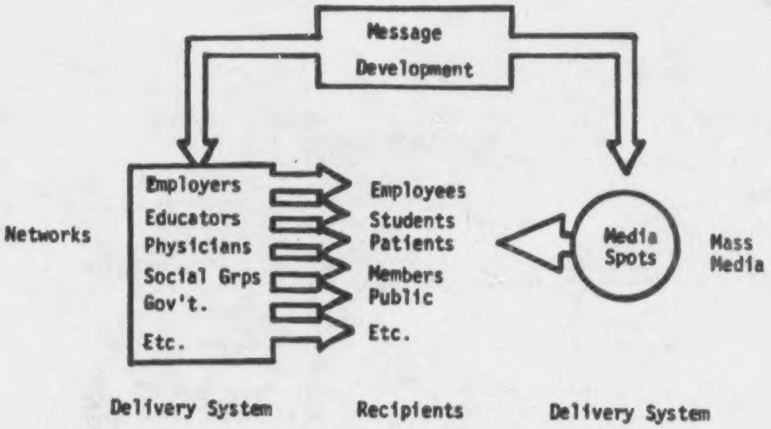

Message Development
Networks
Employers
Educators
Physicians
Social Grps
Gov't.
Etc.
Employees
Students
Patients
Members
Public
Etc.
Media Spots
Mass Media
Delivery System
Recipients
Delivery System

Figure 31
A Model for Message Development and Distribution in NHTSA Voluntary Safety Belt and Child Restraint Usage Program

The most likely messages being considered for development at this point in time include the following:

(1) Explaining the function of the safety belt; just how the belt works, how it keeps people restrained and helps to avoid or reduce injury if there is an accident and, therefore, why it saves lives. This also includes the changing of the name "seat belt" to "safety belt."

(2) Everyone needs to wear safety belts and use child restraints for their children. Factors such as why belts are a major safety feature, why other safety device or action are not substitutes and perception of crash and injury risks would be addressed.

(3) The problem of safety belt and child restraint nonuse is a public health issue. The use of such device is just as important as getting shots, exercising, or taking vitamins. It is an important and powerful form of preventative medicine.

(4) Captain of the ship or leadership. It is important for you and I to ask people to buckle their belts and use child restraints. It is our responsibility. It is socially acceptable. As drivers we have responsibilities towards our passengers.

As further research continues, new messages will be derived and utilized. The direction of the campaign will change as public attitudes and perceptions begin to change.

F. Time Phasing

To the extent possible, message delivery will be time-phased. It is important that time phasing take place so that new material is continually being introduced to the public and so that the effort does not stagnate.

Work is continuing on message development and on adding groups to the networking plan. Care will be taken not to oversimplify the long process of behavior-modification into a quick, catchy slogan rather than a well researched, thought-out series of messages and their delivery. Emphasis will be maintained on executing a systematic multi-faceted plan of attack.

G. Summary

In summary, some of the basic premises and approaches of the campaign should distinguish it from most past efforts to promote voluntary safety belt usage. They include.

(1) The **delivery of the messages**, materials and incentive programs will be accomplished through **organizational networks** that are already in place and which should be effective in molding and modifying attitudes and behavior. These organizations and social forces together touch nearly every American in one or more ways.

(2) The use of **mass media**, especially television, will be important in delivering messages, but primarily in a manner that **reinforces and provides support** to those being delivered through the organizational channels.

(3) The **messages** that are developed and used will be **based on thorough market (and product) research** and will reflect high quality and production.

(4) Finally, a the program will be based on the States' current interest and success in promoting **child restraint usage.** This program area is already reopening the minds of many persons to the need for restraints for all vehicle occupants.

VII. Past Indicators of State Priorities in the Safety Belt and Child Restraint Area

A. Workshop Indicators

One of the first indications of State priorities for activity in the safety belt and child restraint area comes from the initial 1979 workshop series on occupant restraints. During this workshop the States were asked which areas they would most like to place their resources. Nearly all the representatives of the States attending the workshops wanted to place their emphases on (1) child restraint programs; (2) public information programs; and (3) driver education programs.

B. State Resource Allocation

Another indication of where the States prefer to spend their 402 funds in the area of occupant restraints comes from an analysis of their programming efforts through the national project reporting system of NHTSA. A review of 1979 and 1980 programs revealed that the primary activity areas were:

- education programs
- public information programs
- infant and child restraint programs
- convincer demonstrations
- surveys

1. Education Programs

Providing instructional materials for public schools was the primary activity in the education program area. Materials such as "Beltman" kits (by far the most popular item), "Do You Buckle Up?," and "Safety Steps" as well as numerous films had been purchased and targeted at elementary school audiences. Brochures, pamphlets, and other informative materials, in addition to films, were being provided to secondary school driver education classes.

From a preliminary analysis, over 1,000 schools and school districts were the recipients of these materials with many more schools and other organizations having access to the materials through libraries and media centers. Instructional materials were being used by elementary and secondary teachers to support and supplement regular curriculum activities. Moreover, in some States, "safety officers" from local law enforcement agencies utilized the materials purchased by coming into the schools to present special safety belt usage programs.

In-service training for teachers was also provided. Workshops were held to acquaint teachers wih new materials and provide a forum to exchange ideas on how to best structure new learning activities into the existing curriculum.

Approximately 15-30 percent of FY 1979 and 1980 safety belt funds was used for education programs.

2. Public Information Programs

Activities in the public information program area attempted to utilize various forms of mass media in order to convey a safety belt usage message. A large portion of funds were spent creating and presenting TV and radio spots. Contractors for these activities were usually public relations firms or State universities with media production capabilities. Other activities funded in this program area included developing and distributing various printed materials, conducting training conferences for various organizations relating to how public information projects can be developed, and contracting for billboards and bus posters.

The proportion of funds used for public information ranged from 25-50 percent.

3. Infant and Child Restraint Programs

Infant and child restraint projects made up a vital part of the safety belt usage program. Generally, projects included: public information and education, loaner programs, and legislation. Materials and media campaigns were planned and developed. States provided educational materials, and in some cases, training to hospital personnel on how to inform parents and parents-to-be about safety belt usage. Child restraint programs designed specifically for pediatricians were also developed. Further, States sponsored displays and exhibits of approved infant and child safety car seats at numerous public places.

A substantial area of activity has been the restraint "loaner" programs, designed to increase restraint usage by getting child safety seats into the hands of parents. Projects involve the purchase of car seats and the loan of them to parents for a small deposit.

The States have also supported efforts aimed at introducing and passing child restraint laws. Activities include making model legislation and other materials concerning child restraints available to State legislators.

Approximatey 25-35 percent of FY 1979 and 1980 funds was used in this program area.

4. Convincer Demonstrations

Years before the Highway Safety Act of 1978 was enacted, States were encouraging the use of safety belts by demonstrating the safety belt "convincer," which graphically shows what might happen to an unrestrained driver or passenger during a low speed crash of about 10 mph. States purchased more "convincers" with earmarked funds and stepped up their demonstration schedules. The "convincer" was usually demonstrated at shopping centers, fairs, and other public gatherings.

Less than ten percent of FY 1979 and 1980 funds has been used to fund convincer demonstrations.

5. Surveys

Many States conducted surveys to identify more clearly the nature of the safety belt usage problem. From survey results, projects could be targeted toward special emphasis areas and certain target populations. In this manner, funds could be allocated for the largest payoff in terms of increased safety belt use.

Surveys usually took one or more of the following forms:

- Usage -- documenting the actual number of driver and passengers (adult and child) who buckle up.
- Knowledge -- finding out what drivers and passengers know and don't know about safety belts.
- Attitude -- discovering the reasons why people believe they don't need safety belts and the myths they hold about the dangers of belt use.

The States spent 10-20 percent of their FY 1979 and 1980 safety belt usage funds for surveys.

6. Miscellaneous

Many States initiated projects that were not easily placed in one of the program areas previously described. Nevertheless, many of the projects were innovative and represented a payoff potential. Examples of miscellaneous projects were:

- Scheduling town meetings with safety belt usage as the main topic.
- Holding a statewide conference on safety belt usage.
- Providing in-service workshops for State employees.
- Purchasing and distributing bookbags and keyrings wth a belt message.
- Conducting safety belt "logo" contests.
- Presenting safety belt "T-shirts" to those drivers and passengers observed wearing belts while driving.
- Making presentations to volunteer groups, employee groups, etc.

Many of the above programs appear to fall in line with suggestions made by past studies and by the review of major countermeasure efforts. What has also been apparent in recent years has been an ever-increasing use being made of the many organizational networks available for conveying safety belt and child restraint messages. Some States are developing reasonably complex and comprehensive educational networks.

However, no State presently has a comprehensive mass media, education, incentive, employer and/or legislative program aimed at safety belt usage. Some are approaching such a comprehensive program in the area of infant and child restraints.

C. Private Sector and State Responses to the 402 Rulemaking Docket (No. 81-12, Notice 1)

Further indications of how the States (and other organizations) feel about 402 funded activities in the occupant restraint area can be obtained from the responses received to Docket 81-12, Notice 1. In general, the comments received reflected more what States have been doing or were planning to do in this area, rather than an analysis of the importance they felt the area deserved.

An examination of the responses to the docket indicated considerable interest in the occupant restraint area. Many of the comments were general in nature. All recognized the importance of programs aimed at encouraging restraint use, whether the restraint is for a child or for an adult.

1. Private Sector Responses

Among the commentors from the private sector, the President of the National Safety Council (NSC) stated that his organization supported the six emphasis areas for 402 funds, including occupant restraints. The President of the Motor Vehicle Manufacturers Association (MVMA), commended "the DOT for its initiative in planning a national campaign for (the purpose of increasing belt usage)" and the Executive Director of the American Association of Motor Vehicle Administrators recognized the effectiveness of safety belt use.

Several commentators called for mandatory safety belt or child restraint laws. They included the President of the Traffic Safety Association of Detroit, an orthopaedic surgeon and a member of the American Academy of Pediatrics. The American Seat Belt Council urged DOT to reinstate an incentive grant program for States which pass safety belt laws and reduce fatalities.

Relative to voluntary usage approaches, a private citizen from Cameron, Louisiana and a member of the American Trauma Society both supported the implementation of public information programs to spread the safety belt message. Similarly, a Maryland resident suggested a media campaign and a public education effort with an emphasis in driver education programs and greater enforcement with public employees.

2. State Responses

As has already been indicated, the States have spent much of their funds on child restraint programs, although some has gone toward encouraging safety belt use. In general contributions to the docket from various States outlined past, present, and future efforts in this area. A summary of State comments is as follows:

(a) **Mississippi** -- The State began a successful pilot child restraint loaner program in FY 1981 and will have four additional programs in FY 1982. A Traffic Safety Association has been formed in the State to promote restraint use policies and legislation. A statewide safety belt education program for second and third graders will be implemented. The program was begun in FY 1981. Pre-and post-tests have demonstrated changes in knowledge and behavior of the students.

(b) **Oregon** -- The State obligated $86,000 toward safety belt use encouragement. Portland bought a display to promote safety belt use and traffic safety. A convincer was purchased in 1978 and is still being used at schools and fairs. One county began a loaner program in 1979.

(c) **Ohio** -- One of Ohio's seven current priority projects is an infant/toddler restraint program. The State has actively promoted KISS (Kids In Safe Seats). By the end of FY 1982 Ohio expects that over 50 percent of new mothers will have received educational material and/or loaned seats as a result of the program. Over 30 percent of the hospitals have at least an educational program, if not a loaner program. The cost is less than $3,000 per hospital. While the figures are not firm, it appears that the increase in child seat use where the program is active is five to ten percent.

(d) **Maine** -- Maine has a convincer program together with a new child restraint law. It expects that they will provide an excellent opportunity to save lives.

(e) **Virginia** -- An emergency public information campaign was begun in Virginia. The result was that during the 1980 Christmas and New Year's weekends traffic fatalities were almost half the number of the previous year. The State recommended that special attention be paid to safety belt and child restraint use by focusing on:

- health care providers
- the general public
- child restraint loaner programs

(f) **Iowa** -- Iowa established over 160 loaner programs statewide in FY 1981. On-site surveys show that child restraint use was up from approximately three percent to about 28 percent by the end of the program's first year. Traffic deaths for children four and under went from 15 in 1979 to nine in 1980. The entire cost from the 402 funds was $35,900. It was pointed out that this project would be cost-effective if just one child's life was saved.

(g) **Pennsylvania** -- This State believes that a child restraint program has high potential. Pennsylvania is working with the Jaycettes and other volunteer groups to set up a statewide network of community loaner programs. It was stated that "The program will be long on results and short on administrative overhead."

(h) **Michigan** -- The Michigan submission stated that of the five programs having a direct impact on reducing accidents and accident severity, the occupant restraints program is third in effectiveness.

(i) **California** -- This State urges "the expansion of the approved program areas to include at a minimum the maintenance of occupant restraint usage activities."

California felt that occupant restraint programs "provide the most immediate and measurable potential for minimizing death and injury from traffic accidents." If there is a silver bullet in highway safety this is it stated the submitter. State activities which cannot continue if Federal funds are withdrawn would include evaluation of approaches to increase usage and coordination of organizational networks in the child restraint area.

(j) **Rhode Island** -- Rhode Island suggests ten emphasis areas, with safety belts ranked fifth. A public information and education and research effort is called for, along with the possibility of a national safety belt use law.

(k) **Colorado** -- The Colorado report stated that since 1966, 3,800 lives have been saved and 84,000 injuries prevented due to Colorado's occupant restraint efforts. The State had an unsuccessful attempt to pass child restraint legislation. However the effort sparked a lot of activity. There will be a statewide seminar of all groups interested in promoting child restraint use. It is anticipated that the seminar will produce more activity in 1982. Colorado also holds an annual child restraint poster contest.

(l) **Illinois** -- Illinois lists the promotion of safety belts as a potentially effective program. It has used 402 funds for this purpose since 1979. In addition, in Illinois 22 hospitals provide educational material to parents of new born children. Twenty-five community projects and five hospitals distribute safety seats.

In general, the greatest amount of activity was in the area of child restraint loaner programs. Federal funding provided the necessary seed money and local communities were often able to take over from there. Additional funding will be needed in the future for expansion into new States and more communities in the States that have programs.

Many comments recognized the value of comprehensive education and information programs, though few such programs are in existence. Importance was also placed on research and evaluation efforts.

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Mr. GORE. OK.

Mr. PECK. The GAO report when it gets published will be the best, comprehensive review of it. But the point is nobody has anywhere in the world tried this comprehensive, indepth, systematic, research-based, basically justifiable campaign. What the GAO concludes is, it is impossible to predict the effect because all other efforts, even those which are extremely successful, which have not been mentioned before this committee, 30, 33, 34 percent sustained usage, did not have this level of commitment, and this comprehensive an approach.

Mr. GLICKMAN. Let me ask you a question. Have you ever considered recommending mandatory seat belt usage laws like they have in many countries of the rest of the world, like our airlines require?

Mr. PECK. Sure. As a matter of fact, the Congress enacted, in 1971, I believe, maybe I could check the date, what amounts to an incentive program for States to do that by adding it to the 402 program. Congress then unenacted it a year later. If you are asking about a Federal mandatory seat belt law——

Mr. GLICKMAN. Not so much a law but a recommendation by NHTSA that States in fact do this.

Mr. PECK. Oh, we have done that constantly. As a matter of fact, the State of Michigan is prepared to vote it out of committee right now. We have testified before all of the States that have adopted child restraint laws. Yes.

Mr. GORE. Did I hear you correctly a moment ago to say you hadn't really examined the extremely successful programs in—where?

Mr. PECK. No, sir.

Mr. GORE. What would you regard as the most successful programs elsewhere in the world?

Mr. PECK. Well, it depends on what you are looking at. I think on a national basis——

Mr. GORE. A minute ago you said extremely successful programs where you get 30 to 35 percent sustained usage.

Mr. **Peck**. That is what has occurred in Great Britain now and has for several years.

Mr. **Gore**. Would you consider that extremely successful?

Mr. **Peck**. No.

Mr. **Gore**. You described it as that a minute ago, didn't you?

Mr. **Peck**. No, I described the results as successful. I am not quibbling. Let me tell you why. All Great Britain does is, in one quarter of the country for 3 months of the year, throw PSA's on television. That is not going to work over the long haul or in terms of large increases. But even with those reservations, usage in Britain is sustained at 30 to 33 percent without, during the time periods of those figures without any mandatory seat belt law.

So it is successful in terms of the amount of increase that it actually induced, but it is unsuccessful in that it is just a one dimensional, one media shot which is and has been by all observers criticized as not being the way to do it. So if you say is it successful in terms of what it achieved, yes. Is it successful in terms of what it could achieve, no. What we are doing is far more and far better thought out.

Mr. **Glickman**. Mr. Peck, I want to go back to small cars. In 1980 NHTSA spent $5 million in small car safety. In 1982 it spent $2 million. In view of the problem of small car safety and growing number of small cars, how is this justified?

Mr. **Peck**. I don't know how we get the $5 million in 1980. Perhaps Mr. Finkelstein can explain it.

Mr. **Finkelstein**. I don't know what you are referring to in 1980. I know what we spent our money on recently. I know how we have spent our vehicle safety money over the years.

[The information follows:]

Integrated vehicle research (RSV)

	Millions
1981	$5.7
1982	2.5
1983	0

Mr. **Gore**. Are you familiar with the Canadian seat belt effort?

Mr. **Peck**. Generally. And I suppose specifically, yes.

Mr. **Gore**. A $450,000 Federal advertising blitz described by an official of their Department of Transportation at its conclusion as, quote, a waste of money.

Mr. **Peck**. I would concur.

Mr. **Gore**. You would concur.

Mr. **Peck**. Yes, as has every informed observer. You cannot get sustained usage from a blitz.

Mr. **Gore**. Yes. What percentage do you expect to achieve with your campaign?

Mr. **Peck**. We don't know, because no one has ever tried it. If you look at the upper bounds of other campaigns, and you look at comprehensive other campaigns such as occurred with respect to the MII campaign in Michigan, usage in some counties there increased by 127 percent.

Mr. **Gore**. Up to what figure?

Mr. **Peck**. Well, in the case of Franklin County, I'm sorry, the township of Franklin, 42 percent. That was 11 weeks and nothing else, media and nothing else.

Mr. **Gore**. Sustained?

Mr. **Peck**. No. That is the point. No. Sustained usage has only been achieved in areas like Great Britain at the level of the low 30's. The low 30's is still 30 percent of usage. Still represents about 3,000 lives a year, which is very significant in terms of actual savings.

Mr. **Gore**. The point is, putting virtually all your eggs in this basket.

Mr. **Peck**. No, sir, not by any stretch of the imagination. I categorically dispute that. Absolutely not.

Mr. **Gore**. What percentage of your resources are going to this seat belt campaign?

Mr. **Finkelstein**. The research and analysis line item in our budget has less than one one-millionth of it, contract program that is close to $30 million, spent on seat belts. The highway safety line item of our budget which accounts for, what, maybe $6 million? Yes, the whole safety belt activity is under—9.6 million over 3 years.

Mr. **Peck**. The budget figure not including the grant program for that period would be $300 million.

Mr. **Gore**. What I meant by putting your eggs in one basket was really, when you look at passive restraints versus seat belts, by withdrawing the standard on passive restraints and operating to go wholly for the seat belt campaign——

Mr. **Peck**. There was no connection between those two decisions. They addressed a different time period——

Mr. **Gore**. I didn't say that there was a connection between them in your mind, Mr. Peck. But as far as the agency is concerned, under your direction, when it comes to restraint systems, you are putting your eggs in the one basket of the seat belt campaign.

Mr. **Peck**. Categorically not. The seat belt campaign effort addresses air bags because lapbelts are necessary, addresses passive restraints because there are and will continue to be cars produced with passive restraints, and addresses active belts.

Mr. **Gore**. What are you doing on passive restraints?

Mr. **Peck**. There are three major educational components in the belt campaign. They all relate to the use of belts.

Mr. **Gore**. OK. So you are putting them all in that one basket.

Mr. **Peck**. But that one basket includes air bags and passive belts as well.

Mr. **Gore**. No, all you are saying is that if and when somebody manages to get a car equipped with an air bag in spite of what is not being done at your agency, they will be marginally better off if they also wear a lapbelt should they be involved in a rear-end collision or a rollover.

Mr. **Peck**. Not marginally better of. They will be better off in all such circumstances. There are 2,000 cars that are out there on the road now with them. And we consider it——

Mr. **Gore**. Here is my point. Where restraint systems are concerned, you have withdrawn the agency's initiative on passive restraints and you have put all your efforts into the seat belt campaign. And yet you do not have the kind of well-thought-out study that would give us any kind of a target for what percentage use you expect to get out of it——

Mr. PECK. That is not true and it is not the conclusion of the GAO. You are confusing once again the difference between being unable to assess the upper bounds of usage, and whether or not we have well-thought-out studies. We have extremely well-thought out studies. The conclusion of those studies is it is impossible to predict the upper bounds because nobody has ever tried it with this level of commitment, this level of complexity and this level of support.

That is what we have discovered. But it is not a case of our not having undertaken studies or not being willing to set a target.

Mr. GORE. Have you done a cost-benefit analysis on it?

Mr. PECK. Well, no, not in those terms because it is so clearly cost beneficial we didn't think it was necessary. The GAO has recommended that we do so. We are.

Mr. GORE. Say that again.

Mr. PECK. Passive restraints would cost literally billions——

Mr. GORE. No, I am talking about a cost-benefit analysis on your seat belt campaign.

Mr. PECK. No cost-benefit analysis in the traditional terms was done at the time we decided to commit this because when you save a human life the amount saved, and as to this we have no quarrel at all with the economists who testified on the passive restraints, is so major that there is absolutely no question the seat belt campaign will be enormously successful. We didn't think it was necessary from a de minimis standpoint to even consider whether you spend $10 million over 3 years——

Mr. GORE. Did you do one on air bags?

Mr. PECK. We have done many on air bags, yes.

Mr. GORE. If the value of a human life is impossible to measure why would you do it on air bags?

Mr. PECK. I said we did. We have done many.

Mr. GORE. Why?

Mr. PECK. Why?

Mr. GORE. You said a moment ago it is impossible to do it on seat belts because the value of a human life is incalculable.

Mr. PECK. That is not my testimony, sir.

Mr. GORE. A minute ago I just asked you whether or not you have done a cost-benefit analysis on your seat belt campaign. You said no. One of the reasons was that it is impossible to put a value on a human life.

Mr. PECK. No, sir, if that was my testimony I would like to correct it and state this.

Mr. GLICKMAN. Go ahead, Mr. Peck.

Mr. PECK. The point is this. When you are calculating the actuarial value for cost-benefit analysis purposes of a human life the value of saving a human life is so immense in economic terms that virtually anything, including an air bag standard, would, if that were the only consideration, under most circumstances be cost beneficial.

Now, as compared to a standard like that—which costs billions of dollars, and this effort which costs the Federal Government less than $10 million over 3 years—there is no question that this would be cost beneficial. It is already cost beneficial. Increased usage we have experienced already today in the first several months of the campaign on an actuarial standpoint makes the entire 3-year program cost beneficial in my judgment.

Mr. GORE. You felt it was necessary for the air bags, but not for your seat belt campaign?

Mr. PECK. No, sir. I am saying we considered it was so clearly——

Mr. GORE. I said you felt it was necessary for the air bags——

Mr. PECK. Excuse me.

Mr. GORE. But not for your seat belt campaign?

Mr. PECK. I am sorry; no, sir, I apologize. I missed the thrust of your question. It is necessary for all regulatory action. The campaign is not a regulatory action. But let me tell you what we did discover and what we did do——

Mr. GORE. You felt it was necessary for the air bag matter but not for the seat belts, right?

Mr. PECK. No. No, because from a cost-benefit standpoint, and we did do this——

Mr. GORE. This is very low grade ore that I am mining here, but it is very difficult to get a candid response.

Mr. PECK. Low grade ore is exactly what we are dealing with because, in order for the seat belt campaign to be cost beneficial, usages would have to increase by one-tenth of 1 percent. Now, if you are saying, did we devote the agency resources to the conduct of a full-scale cost-benefit analysis when we knew that facts, the answer is no, but we are doing so.

Mr. GLICKMAN. What I would like to know is, with regard to the seat belt, quote, advertising campaign, have you brought in an outsider to manage this for you, or are you going to be involved in the production, public relations, and dissemination of all the data, yourself?

Mr. PECK. We published RFP's. That contract should be able to be issued by the end of this month. It was one of the GAO's recommendations that we in fact push it out the door. And that is what we are doing. That is the contract—because of—item No. 2 in the priorities is only this public media effort, that was the $850,000 budgeted estimate I gave before.

Mr. GLICKMAN. Are you going to have some management consultant come in here and run it for you, the entire effort?

Mr. PECK. No, no, no. First, we have within the Agency substantial resources in this regard. What I was talking about just now is the actual production of PSA's for use by the networks. That will be awarded to an advertising agency.

Mr. GLICKMAN. Your agency, you, Mr. Peck, and the people who work for you, are you going to manage this effort?

Mr. PECK. To the degree any sponsor manages an advertising agency's effort, we will, yes.

Mr. GLICKMAN. You said the advertising agency was just going to do the $850,000 for the spots. I am talking about the whole kit and caboodle, your No. 2 and 3 together, or whatever. I believe that is correct. The NHTSA is going to manage this program that encourages people to wear seat belts.

Mr. **Peck**. That is right. That is only a small part of the total, call it public and private sector resource. But we are managing that, yes. Mr. Brownlee is the head of that office within TSP.

Mr. **Glickman**. Now, in Mr. Finkelstein's testimony of last week, we were talking about the way to get better small car data, and he talks about a national accident-sampling system that you are going to begin.

Mr. **Peck**. No; it has been begun. We have our first report. There are 51 sites. We already have more than 5—52 sites. We already have more than 20,000 cases.

Mr. **Glickman**. In 1983, this will investigate 10,000 accidents. That is according to Mr. Finkelstein's testimony.

Mr. **Peck**. At 50 contracts it will be about 50—excuse me, investigating sites—the number will be 10,000 accidents per year; that is right.

Mr. **Glickman**. How much is this item in your budget for; the sampling system?

Mr. **Peck**. $9 million to $10 million per year. Three times the safety belt.

Mr. **Glickman**. On your list of priorities, how high a priority is this item?

Mr. **Finkelstein**. It is not in there as a separate item because that data center and our data analysis program supports virtually every activity of the agency.

Mr. **Peck**. The first item on the priorities as to which it is the major single component is priority No. 5 crash-worthiness support.

Mr. **Glickman**. I guess my point is, Do you consider this program a high priority item of NHTSA?

Mr. **Peck**. Absolutely indispensable; yes, sir.

Mr. **Glickman**. Absolutely indispensable. This would appear to be somewhat of a response to the GAO's concerns that there is no data on small cars, and that this accident-sampling system, at least according to Mr. Finkelstein, would attempt to provide that data; Is that correct?

Mr. **Peck**. No. The NAS data file and NAS effort started 5 or 6 years ago. At the time of the GAO report, we didn't have enough cases in the NAS file and enough contract sites to establish the body of data that the GAO felt was necessary. That curve upward started 5 or 6 years ago and has now gotten to the point where we have——

Mr. **Glickman**. Mr. Finkelstein's testimony indicates that until 1982 we had no current data file that would allow us to isolate the effects of size and weight from the effects of speed.

Mr. **Peck**. That is correct.

Mr. **Glickman**. But now you are getting that data, is that correct?

Mr. **Peck**. We have been, since that date; yes.

Mr. **Glickman**. Since that date is since right now. We are in 1982.

Mr. **Finkelstein**. No. What I said was that we did not have enough cases yet in hand under that program that we were allowed to make those kinds of refinements. A system to develop that kind of information takes a number of years to put in place. The system then starts turning out information. The information has to reach a substantial size before you can do the kinds of analyses that will allow you——

Mr. **Gore**. Will this system answer the GAO's objections?

Mr. **Finkelstein**. I would hope so. I expect it will and that is the reason, one of the many reasons, it is in place, because it is not only the need cited by GAO, it has been the continuous need cited by virtually every member of the highway safety profession, that we need this.

Mr. **Glickman**. If you are subject to budget cuts, which you may be, how will this item be treated in terms of priorities in the funding in NHTSA's budget?

Mr. **Peck**. I fought very hard for it. The change that was made, the only change that was made in originally projected funding was to defer for 1 year the completion to 75 contract sites. I would fight to keep this very, very hard.

Mr. **Glickman**. What happens if you have a competition between this and let's say your seat belt-educating program? Where do you go from there?

Mr. **Peck**. It is difficult to imagine an agency down to the level of about $8 million worth of funding, but that would be a very difficult question.

Mr. **Glickman**. I submit to you——

Mr. **Peck**. From a cost-benefit standpoint, it is clear the belt campaign——

Mr. **Glickman**. I have read the GAO report. I think it makes a very strong case that this is an item that you haven't been doing as well as you should have been doing, and it is probably the most important item you can do in terms of letting the world know the problems with small car safety.

Mr. **Peck**. I concur entirely, and that has been our position within discussions within the Department as to budget and within the administration as to budget.

Mr. **Glickman**. I am going to go for a moment to the issue of the cooperative research project with the automotive industry. I talked about this a little bit in my opening statement. I want you to characterize for me, in a brief nature of no longer than 2 minutes, what this is and who is involved.

Mr. **Peck**. It is a way to get access to industry research which we have not previously had access to.

Mr. **Glickman**. Is there a formal organization?

Mr. **Peck**. No.

Mr. **Glickman**. Is there an informal organization to it?

Mr. **Peck**. Yes.

Mr. **Glickman**. Is there anything on paper that would describe it?

Mr. **Peck**. Printed, but not published. The docket itself is very substantial. But if you are talking about the institutionalized framework, a short description of it, Mr. Finkelstein tells me that has not been published yet.

Mr. **Gore**. Is there a document that is printed but not published, you said?

Mr. **Peck**. Yes. It hasn't physically been printed. It is just a short narrative discussion of it.

Mr. **Gore**. Is that the short thing that you provided our staff?

Mr. **Peck**. No. I want to make clear my understanding.

The single, easiest description of the effort is in a document which will be published, I hope as early as next week, called "Safety Priorities." That is the narrative description of the process——

Mr. **Gore**. No, that is a description of what this joint work is focused on, is that right?

Mr. **Peck**. Yes. If the question is, is there a charter or certificate of incorporation, something like that, no, of course not.

Mr. **Glickman**. Is there a formal membership list of participants in this organization?

Mr. **Peck**. Not to my knowledge, there is no formal membership list. There are no formal members.

Mr. **Glickman**. Are there meetings?

Mr. **Peck**. Yes. Perhaps I could have Mr. Finkelstein describe everything that has happened.

Mr. **Glickman**. Describe it and also describe who is invited to the meetings.

Mr. **Finkelstein**. The MVMA and the NHTSA——

Mr. **Glickman**. That is Motor Vehicle——

Mr. **Finkelstein**. Motor Vehicle Manufacturers Association and National Highway Traffic Safety Administration independently prepared lists of projects. The NHTSA list of projects was a list of projects where we were going to be conducting research.

The MVMA polled their member companies and published a list of areas where they or their member companies would be conducting——

Mr. **Glickman**. Now, did they have your information, or did they—did you give them a list?

Mr. **Finkelstein**. We did these independently. When we got the lists, we looked for areas where both parties were going to be proceeding on reearch activities. Where there were areas that we were going to be proceeding that were similar to areas that they were going to be—in which they were going to be conducting research—we decided to share information.

What essentially is happening, and it is the only project that has really gone far enough along that we can speak to substantively, the side-impact program, what we have are a series of meetings that discuss paralegal research activities of the auto manufacturers and of the NHTSA.

Mr. **Gore**. Can I ask a question at that point?

Mr. **Glickman**. Yes.

Mr. **Gore**. Let's take a look at the side-impact research project. You began—essentially, you decided to do your research together?

Mr. **Peck**. No, sir.

Mr. **Gore**. You decided to do it, your research, and share it with each other?

Mr. **Peck**. No, sir.

Mr. **Gore**. Wait a second, Mr. Peck. Do you agree, didn't you decide to share your research with each other?

Mr. **Finkelstein**. Yes.

Mr. **Gore**. Mr. Peck just said no.

Mr. **Finkelstein**. No. What you said——

Mr. PECK. The question was, did we decide to do it together and the answer is no.

Mr. GORE. You just sort of fell into it?

Mr. PECK. No. We had years worth of research within the agency, and a parallel long period of research within the industry. One of the preliminary questions I asked within the agency was, do we have any idea what these guys out there are doing?

Mr. GORE. Mr. Peck——

Mr. PECK. In case we are doing the same thing. Now——

Mr. GORE. Mr. Peck, did you decide to share the research with each other?

Mr. Finkelstein?

Mr. FINKELSTEIN. Yes.

Mr. GORE. Mr. Peck?

Mr. PECK. Yes, but that is not——

Mr. GORE. All right, thank you.

Mr. PECK. That is not the same question.

Mr. GORE. It is precisely the same question.

Mr. PECK. No, sir; you said did you decide to undertake the research.

Mr. GORE. No.

Mr. PECK. The point is, we had a vast body of data out there and another vast body of data and——

Mr. GORE. Mr. Peck, please. The question earlier was, did you decide to share the research together. At a point prior to that question I asked the other question. Did you decide to undertake——

Mr. PECK. First we decided to determine what parallel and identical research was under way.

Mr. GORE. OK.

Mr. PECK. Then we decided to see how we could reduce duplication.

Mr. GORE. Then you decided to share each other's research?

Mr. PECK. That has always been the case as far as the Government is concerned. All of our research is of public record. They decided that they would give us the research and that is what we never had before.

Mr. GORE. Well, do you share—well, let me just proceed on this. It is a little frustrating to go on with this when we get diametrically opposite answers from the two of you to relatively simple questions.

Now, you did decide to share research with each other, or at any rate you were sharing the research with each other?

Mr. PECK. Our research has always been a matter of public record. It was decided in this project that they would share with us their research, both the benefit and the differences.

Mr. GORE. Now, beginning in March 1982, the first of these joint groups began meeting together for a technical review of side-impact research.

Mr. Finkelstein, is that correct?

Mr. FINKELSTEIN. Yes.

Mr. GORE. Now, there was a notice of advance rulemaking on a side-impacts standard pending at the time this joint group began meeting to review the technical research data; that is correct, Mr. Finkelstein?

Mr. **Peck**. Mr. Chairman——

Mr. **Gore**. Mr. Finkelstein?

Mr. **Finkelstein**. Yes.

Mr. **Gore**. Now, a few months later, in July, the agency decided not to go ahead with rulemaking on a side-impacts standard. Correct, Mr. Finkelstein?

Mr. **Peck**. There was no——

Mr. **Gore**. Mr. Finkelstein?

Mr. **Finkelstein**. No.

Mr. **Gore**. All right.

Mr. Peck.

Mr. **Peck**. There was no pending notice of rulemaking. That is the point I was trying to make. You said a notice of advance rulemaking. What was published in 1979 was an advance notice of proposed rulemaking which by no stretch of the imagination can be described as anything more than a request for information about what people knew about this problem.

Mr. **Gore**. Mr. Peck, again you are consuming the time of these subcommittees with a very arcane distinction on grammar.

Mr. **Peck**. That is not a distinction on grammar. That is a distinction in substance. It is a distinction in law and it is a distinction in fact. The difference between——

Mr. **Gore**. There was a notice, an advance notice of rulemaking.

Mr. **Peck**. That was not a proposed rulemaking nor, if you look at the text of it, by any stretch of the——

Mr. **Gore**. I didn't say proposed rulemaking. I said a notice of advanced rulemaking pending.

Mr. **Peck**. An advanced notice of proposed rulemaking had been published in 1971—1979.

Mr. **Gore**. It was pending at the time this joint research sharing began, correct?

Mr. **Peck**. That is correct, and the very first——

Mr. **Gore**. A few months afterwards your agency decided not to go forward with a rule, with the rulemaking on a side-impact standard, isn't that correct?

Mr. **Peck**. There was no pending rule. There was nothing but a request. And I would like——

Mr. **Gore**. I did not say there was a pending rule.

Mr. **Peck**. We have——

Mr. **Gore**. Mr. Peck, please, don't make this so difficult.

The first step in the regulatory process is the decision on whether or not to proceed with a specific regulatory approach. And it is, and the courts have so decided that it is, an integral part of the rulemaking process. What you had pending was a decision on whether or not you ought to go forward with a rulemaking proceeding.

Mr. **Peck**. Mr. Chairman——

Mr. **Gore**. And then you got together with the industry, with nobody else present, with no public notice of the fact that it was taking place, no notice of the time or place of the meetings, no other input except that of the industry, and then right after that you decided not to go forward with the rulemaking process. Isn't that correct?

Mr. **Peck**. That is not, except by the broadest stretch——

Mr. **Gore**. Tell me why, tell me exactly where, in what particulars is that statement incorrect.

Mr. **Peck**. First, it is incorrect in that it presupposes the existence of a rulemaking process. The advance notice of proposed rulemaking——

Mr. **Gore**. There is no such thing as a rulemaking process?

Mr. **Peck**. No, there is no such thing as an advance notice of proposed rulemaking, period. It is a fix. It is not in the APPA. It is not developed in law. It is a custom. It is a convention.

Mr. **Gore**. Wait a minute, Mr. Peck, now come on, really. Really, wasn't there something published in 1979 about——

Mr. **Peck**. December 6, 1979, yes, sir.

Mr. **Gore**. What was it?

Mr. **Peck**. It was a document entitled "An Advance Notice of Proposed Rulemaking." That does not mean it has status in law.

Mr. **Gore**. I thought you just said——

Mr. **Peck**. No, you asked me in what particular was your statement inaccurate. There is no such thing in law——

Mr. **Glickman**. Would the gentleman yield?

Mr. **Gore**. I have never seen a witness like this, I swear I haven't.

Mr. **Glickman**. Mr. Peck, Mr. Gore is not implying that this advance notice constitutes a formal rulemaking procedure——

Mr. **Peck**. That is the only issue which is relevant——

Mr. **Glickman**. Wait a second.

However, the fact that you prepared such a notice indicates to the public at large that you are contemplating such possible rulemaking.

Mr. **Peck**. Mr. Finkelstein issued it and signed it. May I ask him to explain it?

Mr. **Glickman**. OK.

Mr. **Finkelstein**. The document was a request for information. It was consistent with a rulemaking plan which identified not just side impact, but virtually every other area of the automobile that caused harm as a candidate for ultimate rulemaking, or standard setting.

That document intended to gather information, and it intended to set the stage for a meeting, an international meeting that we were holding a few months thereafter to discuss the state of knowledge on side impact crash protection.

Mr. **Gore**. Now legally, Mr. Finkelstein, isn't that a preliminary step in the rulemaking process?

Mr. **Finkelstein**. I am not a lawyer and I would have to ask our counsel to answer that or the administrator if he cares to.

Mr. **Peck**. I will ask counsel.

Mr. **Berndt**. We have many different ways of gathering information for research or formal interrogatories to the industry. One of the ways is an advance notice of proposed rulemaking. It is not a rulemaking, per se. It is just a request for information that goes in the Federal Register, gets broad coverage, and we get good response to it.

Mr. **Gore**. Does it have legal significance in the rulemaking process?

Mr. **Berndt**. No, it does not.

Mr. GORE. If it does improperly or not in accordance with the APPA, does it have an effect on any rules that subequently result.

Mr. BERNDT. No, it does not. It is just an information device. It has no significance at all. It isn't a final rule. It is not reviewable.

Mr. GORE. Is it typical for such a notice to be published as the first step in a process that results in a rulemaking?

Mr. BERNDT. As I have said, that is one of the ways to gather information. It is an excellent way to gather information. We use it frequently.

Mr. GORE. Normally, when NHTSA in the past has established a rule, isn't it true that it has normally started with this step?

Mr. BERNDT. No. We do it occasionally, I would say.

Mr. GORE. Occasionally?

Mr. BERNDT. Yes.

Mr. PECK. It was in an excess of caution, lest anyone raise this precise question we are talking about now that I directed the General Counsel's office to tell me why, if we wanted to take this step which will allow us access to independent industries' research, that advanced notice of proposed rulemaking would be in any respect troublesome.

Their conclusion was that although it would not legally be troublesome, and it was not part of the rulemaking procedure, the appearance of having it out there could be raised, I presume, in just such a forum as this. So we withdrew it.

But at the same time we withdrew it we said, and I quote from the Federal Register, that rulemaking will be reopened after research and analysis has progressed to the point that appropriate test methods and performance program meters can be developed.

Mr. GORE. What rulemaking?

Mr. PECK. I should read the previous sentence, because more than 2 years have elapsed since issuance of the advance notice and because a substantial amount of research remains to be completed before a proposal can be issued, the agency has determined that the rulemaking proceeding on an upgraded side impact protection standard should be alternated.

Mr. GORE. Now wait a second. Hold on.

The rulemaking proceeding on a side impact standard was terminated?

Mr. PECK. The advanced notice——

Mr. GORE. You just read the words, Mr. Peck.

Mr. PECK. That is correct.

Mr. GORE. From the official document.

Mr. PECK. I am sorry. There were many pending rulemakings that addressed this question.

Mr. GORE. They were all terminated?

Mr. PECK. No, only this one because only this one was related to research.

Mr. GORE. Wait a second. You just read the words. The rulemaking standard on a side impact standard was terminated. That took place a few months after you got together, the folks at NHTSA got together with the folks in the automotive industry and reviewed the technical research.

Now, you see the point. With no public interest input, no input from any other part of the society like the insurance industry, you set up a process that allows your agency technical people to sit down with those from—with only one point of view, to govern the technical data base on which this subject rests, and then, right afterwards, still without any input from the insurance companies or from the public interest groups or from anybody else, right afterwards you decide to terminate the rulemaking proceeding.

Now we can—I will accept what your counsel says about the legal significance of the advanced notice. But the fact of the matter is, it was by your own description, quote, rulemaking proceeding, even in this very preliminary stage.

Mr. PECK. It was the assumption that it was a rulemaking proceeding that underlay our withdrawal. It has no legal status, as we have testified. You could not go to a——

Mr. GORE. You assumed it was a rulemaking proceeding?

Mr. PECK. Because otherwise we would be terminating a nonexisting entity.

Mr. GORE. Was it a rulemaking proceeding?

Mr. PECK. No, sir.

Mr. GORE. Why did you say it was?

Mr. PECK. By no stretch of the imagination.

Mr. GORE. Well, you just said it was.

Mr. PECK. I regret profoundly that we did not terminate something called something else, if that is the commission—if that is the committee's interpretation.

Mr. GLICKMAN. Mr. Peck, let me ask you this question: Did you ever put notice in the Federal Register about your cooperative research program in the aggregate?

Mr. PECK. Not apparently as such, no. I testified to it. We put out publications on it. We referred to it constantly.

Mr. GLICKMAN. Did you not feel that not having put in the Federal Register notice of a cooperative research effort might violate at least the spirit of the law, the spirit of the Administrative Procedures Act?

Mr. PECK. Mr. Chairman, we had looked at it so very carefully that I have to tell you, no. We do a lot of this we don't put it in the Federal Register. It never occurred to me to do so. I had testified publicly. I had spoken publicly about it. It was known to everybody. It was published in the press.

The entire exercise was a matter we were taking great public credit for and great public pride in.

Mr. GLICKMAN. Let me ask you, regardless of whether or not you consider these cooperative task forces to be proper or improper, and we intend to ask the General Accounting Office about this because we want to make sure the law is complied with, do you think these research groups look appropriate?

Mr. PECK. If you ask me do I like the lines of questioning that have just been raised, the answer is no. But I do not think there is any substantive basis whatsoever for the Federal Government being objected to on the basis of programs designed to elicit research material from the private sector. It is exactly what the prior administration recommended doing. It is exactly what Secretary Goldsmith put in the automobile report for 1980. It is, as far as I am concerned, abolutely indefensible.

The docket to this proceeding is by now 2 feet thick. Anybody can get it. Anybody has gone and gotten it.

Mr. GLICKMAN. Not that it is not appropriate, I agree with you, I think it is appropriate for the Government to share information. The question is, what is the procedure and the forum so all folks have the opportunity to see what information is being shared.

Mr. PECK. I concur and didn't mean in my prior answer to say that I think the appearance of possible impropriety is not a relevant consideration. It is and should be.

[Related material follows:]

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

OFFICE OF GENERAL COUNSEL

September 21, 1982

The Honorable William D. Ford, Chairman
Subcommittee on Investigations
Committee on Post Office and Civil Service
House of Representatives

Dear Mr. Chairman:

You have requested our opinion on whether the 35 task forces operating as part of the President's Private Sector Survey on Cost Control in the Federal Government are "subcommittee[s] or other subgroup[s]" of the Survey's Executive Committee within the application of the Federal Advisory Committee Act. The Executive Committee is recognized to be an advisory committee under the Act and, in accordance with the Act, it has been chartered as such by the Department of Commerce.

For the reasons stated hereafter, we conclude that the task forces are subcommittees or subgroups of the Executive Committee within the application of the Advisory Committee Act.

I.

Section 3(2) of the Federal Advisory Committee Act, Pub. L. No. 92-463 (October 6, 1972), 86 Stat. 770, 5 U.S.C. App. I, provides in relevant part:

> "The term 'advisory committee' means any committee, board, commission, council, conference, panel, task force, or other similar group, or any subcommittee or other subgroup thereof (hereafter in this paragraph referred to as 'committee'), which is--
>
> "(A) established by statute or reorganization plan, or
>
> "(B) established or utilized by the President, or
>
> "(C) established or utilized by one or more agencies,
>
> in the interest of obtaining advice or recommendations for the President or one or more agencies or officers of the Federal Government * * *." (Emphasis supplied)

Neither the provisions of the Advisory Committee Act nor the congressional committee reports on the legislation enacted as the Act elaborate on the phrase "any subcommittee or other subgroup" of an advisory committee. However, the words themselves suggest that an expansive application was intended. Also, the legislative history of the Act indicates that the basic definition of "advisory committee" was to be applied broadly:

> "* * * it is well to establish the meaning of the phrase in section 3(1) and 3(2) 'committees * * * established or organized * * * by any officer for the purpose of furnishing advice.' What kind of committees would this bring into coverage under the legislation? The intention is to interpret the words 'established' and 'organized' in their most liberal sense, so that when an officer brings together a group by formal or informal means, by contract or other arrangement, and whether or not Federal money is expended, to obtain advice and information, such group is covered by the provisions of this bill. * * *"[1]

The Commerce Department's Committee Management Handbook, which governs advisory committees established by or assigned to the Department,[2] likewise gives broad coverage to the concept of advisory committee subcommittees or subgroups. Part II, chapter 1, section E of the Handbook "applies to any advisory committee subunit, whether it is to be identified as a subcommittee, task force, study team, panel, or subgroup, or by any other term, and whether it is temporary or permanent." This section of the Handbook further provides:

> ".03 Conditions of Utilization. Subcommittees can not be used to circumvent any of the objectives of the FACA [Federal

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[1] S. Rep. No. 92-1098, at 8 (1972); see also, National Nutritional Foods Association v. Califano, 603 F.2d 327, 334-36 (2d Cir. 1979).

[2] Section 8(a) of the Advisory Committee Act requires each Federal agency to establish uniform administrative guidelines and management controls for its advisory committees.

> Advisory Committee Act]. The Activities and operations of subcommittees are subject to the same rules and conditions that apply to chartered parent committees as set forth in the next chapter, 'Committee Activities and Operations.'"[3]

II.

Against this background, it is necessary to consider the nature and functions of the 35 task forces and how they fit within the structure of the Survey.

The Executive Committee and other elements of the Survey.

Executive Order 12369, dated June 30, 1982, 47 Fed. Reg. 28899, established the Executive Committee of the President's Private Sector Survey as an advisory committee in the Department of Commerce. Section 2 of the Executive Order sets forth the following functions for the Executive Committee:

> "(a) The Committee shall conduct a private sector survey on cost control in the Federal Government and shall advise the President and the Secretary of Commerce, and other Executive agency heads with respect to improving management and reducing costs.
>
> "(b) The Committee shall conduct in-depth reviews of the operations of the Executive agencies as a basis for evaluating potential improvements in agency operations.

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[3] See also Part I, section G of the Handbook, which states:

> "Subcommittees must be authorized and controlled. They are subject to the same policies, restraints, and requirements as parent committees. Any proposed subcommittee which would have a member who is not on the parent committee must be separately established as an individual committee. Subcommittees can not be used to circumvent requirements or responsibilities of the parent committee."

> "(c) In fulfilling its functions the Committee shall consider providing recommendations in the following areas:
>
> "(1) Opportunities for increased efficiency and reduced costs in the Federal Government that can be realized by Executive action or legislation;
>
> "(2) Areas where managerial accountability can be enhanced and administrative control can be improved;
>
> "(3) Opportunities for managerial improvements over both the short and long term;
>
> "(4) Specific areas where further study can be justified by potential savings; and
>
> "(5) Information and data relating to governmental expenditures, indebtedness, and personnel management."

Section 3(a) of the Executive Order provides:

> "The heads of Executive agencies shall, to the extent permitted by law, provide to the Secretary of Commerce, the Committee and its staff units such information, including that relating to the structure, organization, personnel and operations of the Executive agencies, as may be required for carrying out the purposes of this Order."

The Commerce Department's charter for the Executive Committee pursuant to the Advisory Committee Act, dated July 7, 1982, repeats the functions of the Committee as specified in section 2 of the Executive Order. It also includes the same provision as section 3(a) of the Executive Order concerning the furnishing of information to the Committee and its staff units. In addition, section 4 of the charter includes the following administrative provisions:

> "(d) The Committee, or subcommittees thereof, is expected to meet at least monthly before the final report and recommendations are submitted to the President."

and

> "(g) The Committee may establish such subcommittees of its members as may be necessary, subject to the provisions of the Department of Commerce Committee Management Handbook * * *."

In addition to the provisions establishing the Executive Committee and specifying its functions, the Executive Order contains several related administrative provisions. Section 3(c) authorizes a management office in support of the Executive Committee:

> "A management office may provide overall administrative staff support to the Committee, guide the day-to-day operations of the Survey and provide liaison with the Executive Office of the President; separate unit staffs may be utilized to provide such staff support as is necessary to accomplish reviews of individual agencies."

Finally, section 3(e) of the Executive Order provides for a non-profit organization to support the Committee:

> "(e) The Committee is to be funded, staffed and equipped, to the extent practicable and permitted by law, by the private sector without cost to the Federal Government. To accomplish this objective, it is expected that the Secretary of Commerce will engage in a joint project, with a non-profit organization, pursuant to Section 1 of Public Law 91-412 (15 U.S.C. 1525), for the purpose of providing staff support to the Committee as described in Section 3(c)."

To implement this provision, the Foundation for the President's Private Sector Survey on Cost Control was established as a non-profit corporation in the District of Columbia. The articles of incorporation state that the primary purpose of the Foundation is to assist the Private Sector Survey on Cost Control. This is to be accomplished by providing expert and professional services, office facilities, staff and other support services.

On July 7, 1982, the Commerce Department and the Foundation entered into an agreement for the provision of assistance by the Foundation to the Executive Committee. In section III of the agreement, the Foundation agrees at no cost to the Federal Government:

> "(a) To provide such suport as may be requested by the Chairman of the Committee to assist the Committee in carrying out its responsibilities, including but not limited to:
>
> "(1) facilities, including office space, furniture, equipment, telephonic and computer equipment and services as may be necessary; and
>
> "(2) staff support to the Committee as may be necessary, and in connection therewith to hire such employees and retain such consultants and advisors, either with or without compensation, as the Foundation in its discretion shall deem necessary or advisable."

Section IV of the agreement, captioned "Status of the Foundation," provides:

> "The parties hereto acknowledge and agree that the status of the Foundation under this Agreement, and in all of its and its employees agents and representatives dealings and relations with the Secretary, the Department of Commerce and other Federal agencies shall be that of an independent entity providing services under a joint project and not as one involving employment, no statutes governing Federal employment shall apply to the Foundation, and the Foundation shall not have any obligation of financial accountability to the Department of Commerce."

The task forces.

The nature and functions of the task forces were described by Mr. Felix E. Larkin, a member of the Executive Committee, in his testimony of September 15, 1982, before your Subcommittee.

In his prepared statement submitted for the record, Mr. Larkin explained the composition of the task forces as follows:

> "The balance of the organization of the President's Private Sector Survey consists of 35 Task Forces which are reviewing the operations of the Executive Branch. These include 23 assigned to cover individual Cabinet departments or sub-departments and a number of independent agencies. The other 12 Task Forces are studying functional areas cutting across departments and agencies such as data processing, procurement, real property management, personnel and user fees. I believe the Committee has received a list of these Task Forces.
>
> "Each of the 35 Task Forces has members of the Executive Committee who act as Co-Chairpersons. A Task Force, typically, has four Co-Chairpersons, a project manager, and from 25 to 30 members. Project managers are generally senior employees of a Co-Chairperson and bring extensive managerial expertise and commitment to the review of assigned areas. These Task Forces are in various stages of analyzing areas of study and preparing work plans."

Mr. Larkin's statement went on to outline the operations of the task forces:

> "* * * the Chairman [of the Executive Committee] and the Management Office are leading each Task Force through a four-phased sequence of activities:
>
> "Phase I -- Assignment and clearance of Executive Committee Members, recruitment of project managers and core staff, orientation briefings of Co-Chairpersons and staff by the Management Office. * * *
>
> "Phase II -- Completion of Task Force recruitment, issue identification through a diagnostic

survey of assigned areas, and preparation of work plans which identified initial areas for further study.

"Phase III-- Performance of in-depth studies by the Task Force, periodic progress reporting to the Chairman and Management Office; discussion of preliminary findings with agency heads and Management Office.

"Phase IV -- Preparation of the draft and final Task Force reports; Task Force close-out.

"In addition, the Management Office provides each Task Force with operating guidelines, report format and preparation instructions, and disclosure and conflict of interest guidelines."

Mr. Larkin's statement continued:

"You have requested that we discuss the nature and purpose of the Task Force work plans. These are merely management tools which are designed to assist the Task Forces in planning their work and in identifying areas they will study. They are used for purposes of setting deadlines and we are examining them as they are submitted. Naturally, the work plans may change and, as a matter of fact, have been changed by the Task Forces as their work has progressed.

"Survey activities are monitored by onsite reviews of Task Force operations, weekly desk officer meetings, bi-weekly project manager meetings, frequent discussions with agency officials, draft and final report review processes, and other techniques."

III.

Even apart from the broad application envisioned for the Advisory Committee Act's phrase "any subcommittee or other subgroup," a functional analysis leads to the conclusion that the Survey's task forces clearly are "subcommittee[s] or other subgroup[s]" of the Executive Committee."

The task forces have organized structures and assigned subject matter responsibilities. Each task force is co-chaired by members of the Executive Committee. Moreover, it appears that the task forces are the source of all substantive activity now in progress to carry out the functions of the Executive Committee. The task forces are developing work plans for their assigned subject areas; they are performing in-depth studies in these areas; they discuss their preliminary findings with Federal agency heads and the Management Office; and they will prepare draft and final reports.

The Executive Committee itself has not yet held a meeting. (As noted previously, the Committee's charter states the expectation that the Committee "or subcommittees thereof" will meet monthly.) Presumably the task forces, or at least some of them, have met since some work plans have been developed. Likewise, at least some task forces are now obtaining information from Federal agencies. (As noted previously, the Executive Order and the charter provide for Federal agencies to furnish information to the Executive Committee "and its staff units * * *.")

In sum, the task forces have all the essential characteristics that one would expect to find in subcommittees or subgroups. We recognize that staffing and funding for the task forces may be provided, at least in part, by the Foundation. However, the source of funding is immaterial so long as the task forces are being used as subcommittees or subgroups of the Executive Committee. Cf., S. Rep. No. 92-1098, discussed previously.

Sincerely yours,

Harry R. Van Cleve

Harry R. Van Cleve
Acting General Counsel

Mr. **Glickman**. Did your general counsel determine if this research committee was in compliance with the Federal Advisory Committee Act?

Mr. **Peck**. Yes, he did.

Mr. **Glickman**. What was his conclusion?

Mr. **Peck**. That it was, of course.

Mr. **Berndt**. We advised Mr. Finkelstein and worked closely with him to assure that it did meet——

Mr. **Glickman**. Did you render a legal opinion on this?

Mr. **Berndt**. Yes.

Mr. **Glickman**. We would like to see that for the record.

Mr. **Berndt**. Fine.

Mr. **Peck**. I can submit it at this time.

[The information follows:]

U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

Memorandum

Subject: Framework for Cooperative Research Efforts

Date: FEB 9 1982

From: Frank Berndt
Chief Counsel

Reply to
Attn of:

To: Administrator

We have previously provided advice on the legal implications of proposed cooperative research activities with the Motor Vehicle Manufacturers Association (MVMA) with respect to the Federal Advisory Committee Act (FACA) and the agency's rulemaking process. You have now requested that we develop a framework in which the agency could cooperate with the MVMA and other private sector organizations engaged in motor vehicle safety research. The purpose of this cooperative effort would be to promote the sharing of motor vehicle safety research results and the avoidance of duplicative research through improved communication between government and the private sector. We wish to structure our efforts to avoid all possibility of conflicts with the FACA and compromise of the agency's rulemaking process.

One approach to these objectives is establishment of a working agreement between NHTSA and the MVMA setting out guidelines for the sharing of research information. This agreement could be supplemented in areas of particular interest through memoranda of understanding defining agency and industry research objectives. While this concept has been developed as a result of the MVMA's proposal, in the interest of fairness and to avoid the appearance of undue influence by a particular group, the agency should announce its willingness to enter similar agreements with other groups engaged in motor vehicle research.

The stated purpose of the working agreement, as defined in the document itself, would be to further public and private sector research efforts in the interest of traffic safety through improved communication. The agreement would commit the parties to a continuing series of informal meetings, to be held from time to time, for the exchange of information concerning safety research objectives. These meetings would provide a forum for the parties to brief each other on plans and objectives for motor vehicle research on subjects of mutual interest and to pose questions on particular matters. To avoid potential conflicts with the FACA, we should be careful not to give the impression that we are using the meetings as a means of generating advice and recommendations on particular subjects.

Information exchanged at these meetings would permit the parties to identify areas in which public and private sector efforts may overlap and lead to the identification of gaps in current research efforts. The parties could also use these meetings to improve their understanding of comparative research capabilities and interests in terms of technology and resources. The meetings would assure access and open lines of communication between the participants.

While meetings would not have to be open to the public, to promote equal access to information, the agreement would provide that information furnished by the agency would simultaneously be made available to the public, possibly through use of the agency's Technical Reference Branch. To the extent that records supplied or statements made by private sector participants may be relevant to pending agency rulemaking proceedings, the agreement would require that such information be placed in the public docket. The substance of meetings would be memorialized for use in possible future rulemaking actions related to activities discussed at the meetings.

Discussions at these meetings could lead to the entry of memoranda of understanding concerning particular research areas. A memorandum of understanding would be a written document, signed by the parties, defining the types of research to be conducted by each party on a particular subject of interest. Through such agreements, research plans and goals could be coordinated to avoid overlap and to assure coverage of areas of importance. The parties would agree, subject to limitations of funding and personnel, to pursue specified research activities related to the subject matter of the memorandum. Any memorandum would provide for the exchange of reports, data, and other materials generated in research described in the memorandum. Statements of work for contracts entered by the parties could also be exchanged to further define the scope of research activities. The memorandum would provide that all information exchanged by the parties would be made available to the general public without restriction.

Other than the process described with respect to working agreements, no formal structure leading to development of memoranda of understanding would be necessary. We contemplate that either party could initiate development of a memorandum of understanding through informal contact. However, to avoid advisory committee questions, particularly in contacts initiated by the agency, we should avoid the appearance of asking for advice or recommendations on the agency's research plans or objectives. Rather, the purpose of any contact should be to exchange information so that each party can develop its own plans in the most productive manner possible. To the extent that unsolicited advice may be offered to the agency in the course of the process, such advice could be received and considered. Difficulty would only arise if we create the impression that we were using the memorandum process to generate such advice.

Also, we must recognize that this process creates the potential for private sector representatives to influence the direction of the agency's research and development efforts in ways which could have a bearing on future regulatory actions of the agency. To preserve the integrity of our rulemaking process, to avoid *ex parte* contacts on rulemaking subjects, and to assure equal access to information, we should decline to enter discussions regarding proposed memoranda of understanding on topics which are the subjects of pending agency rulemaking proceedings.

We should of course avoid the possibility or appearance that any group is receiving a special opportunity to influence the direction of our research activities or to further its research efforts with information not generally available. For this reason, all information regardless of source exchanged as a result of memoranda of understanding should be made available to the public in the same manner as materials related to the overall working agreement. Also, contacts should be documented for reference in future rulemaking activities which may arise out of research conducted under the memoranda.

Given the potential legal implications of our actions in this area, all working agreements and memoranda of understanding should be reviewed by the Office of the Chief Counsel before final approval.

#

Mr. GLICKMAN. Do you have formal meetings?

Mr. FINKELSTEIN. We have formal meetings at a day agreed upon so many people can travel to where the meetings are held and people are invited.

Mr. PECK. Has anybody, Mr. Finkelstein, ever not—I do not know the answer to the question. I am sorry.

Mr. FINKELSTEIN. After Tuesday I asked the chairman of all of the task forces, I asked as many people from NHTSA who were on these whether (a), there was a conscious discussion not to invite people; (b) whether anybody had ever approached them seeking an invitation who was turned down; and third, whether anybody had approached them seeking information and the information was refused.

In response to the first question, there was never a conscious decision not to invite. It was a program to share information between MVMA and the NHTSA. MVMA invited representatives of their companies, and obviously we were there on the Government's behalf.

Second, nobody could recall anybody requesting to be in attendance at the meetings.

And third, nobody could recall anybody asking for information where the information was denied. There were only a few cases where people were asking for information and it was made available.

The information has been shared with the International Standards organization. There have been briefings at the ESD conference on the status of programs, projects underway in this program. And the next SAE meeting in February, there are going to be a number of papers based on the work of——

Mr. GLICKMAN. Would you let people come in, if folks wanted to come into these meetings would they have been open so that——

Mr. FINKELSTEIN. When Joan Claybrook testified the other day, the one thing that surprised me was her reference to Bob Hess. Dr. Hess is the director of what is currently called the University of Michigan Transportation Research Institute, which was formerly the Highway Safety Research Institute. It is an organization, one of the most outstanding research organizations in the country.

I called Bob Hess because I did not recall any statements opposing this program. I saw Bob about a month ago in Japan. I see him certainly at least every couple of months in Michigan and here. He vigorously objected to the program when I spoke to him on the phone.

I was frankly very surprised. He said he had mentioned it to me about 2 or 3 months ago, which surprised me because I didn't recall the meeting he referred to. He suggested, he said, Mike, to cover yourself on this program you should at least invite some independent experts. I asked him what if the independent experts that we, quote, invited, were from Southwest Research Institute or University of North Carolina or his competitors.

The other question was, you know, would they come for free. He said his people would go for free. He did say, did not have a real answer to what happens if you pick their competitors because there obviously is a research industry just as clearly as there is an automobile industry. So I have to admit I was surprised at his vehemence.

I then called another rsearcher, Dr. B. J. Campbell, director of the North Carolina Research Institute, and I asked him, who I know as well, whether he was offended by this idea. And I used a lot of Bob Hess's terms which were not kind.

Dr. Campbell said, you know, Mike, one of the things I, or he, had been suggesting is that there be closer cooperation, that it is critically important; that he can understand how it is possible to look at it in that light.

I asked him, you know, is there any reasonable way or does he have a suggestion to help avoid some problems of this nature. And his problem was the same problem that I faced after talking to Dr. Hess a few days ago, how do you decide who is in or who is out, how do you take what are technical low-level informal discussions on a shared research and keep them going in a productive manner? And so——

Mr. GLICKMAN. If I may go on, it appears to me at least you made the decision, then, to exclude certain groups of people.

Mr. FINKELSTEIN. We made the decision to work with specific groups of people.

Mr. GLICKMAN. OK.

Mr. FINKELSTEIN. Yes, sir, we did——

Mr. GLICKMAN. In doing so, you decided not to invite the world?

Mr. FINKELSTEIN. Correct.

Mr. GLICKMAN. In doing so, you made a decision that the Motor Vehicle Association and their component members might be included but others would not be included.

I tell you what bothers the committee, or bothers me, is that it leads to the appearance that if a certain group of people are able to advise, set or manipulate your research agenda, the same thing may be true with respect to your regulatory agenda.

Mr. PECK. Mr. Chairman, I fully concur in that as a danger. The difficulty is in how to prevent that kind of baseless suggestion. I think a way that as a matter of record the agency can establish that that is not the case is, first, all of the proceedings and all the results of this research are and will be made public. They are now in the docket. So everyone in the world can go and see that we are not doing anything——

Mr. GLICKMAN. That is usually after the fact.

Mr. PECK. No. I am saying concurrent. I am not saying after the fact. After the fact is a different process. After the fact——

Mr. FINKELSTEIN. Of course it is after the fact.

Mr. GLICKMAN. The research may already have been done.

Mr. PECK. No, I am saying contemporaneous with each individual item it is publicly documented.

Mr. GLICKMAN. Have you had similar regular meetings with other folks besides the Motor Vehicle Association such as academics, the industry, public interest groups, or other knowledgeable parties.

Mr. PECK. Of course.

Mr. GLICKMAN. But on the same subject matter as you are talking about with the MVMA?

Mr. FINKELSTEIN. In the past we have had many meetings with many individuals. In fact, I am sure you are not surprised that during the entire history of this agency we have had meeting after meeting with specific automobile manufacturers.

What is different about this program is that, rather than meeting with one company, for example, we had been meeting with General Motors probably on the basis of every 2 months on side impact research and their programs dating back to 1978, because they were talking a different approach than we were. The difference is that we are meeting with more than one company on issues of this nature.

We are trying in fact to get similar work under way with foreign governments, with foreign manufacturers. We would hope to set up forums like this with any group that can meaningfully contribute to our technical knowledge.

Mr. GLICKMAN. I guess you have kind of cloaked a method to try to exchange research information into something which closely parallels a formal advisory committee structure even though perhaps under the law, and I will look at your legal opinion, that it wasn't that. And all I am saying to you is that we want to keep this arm's-length relationship here, and the appearance is that it has been violated.

I think that the committee feels that that is a problem. Again I go back to the fact that NASA and the FAA have all sorts of advisory committees that advise them on ongoing research programs, safety research, human factors research, etc.

Mr. PECK. As do we.

Mr. GLICKMAN. But they have formal mechanisms by which there is the kind of open input into that process so nobody is excluded.

Mr. FINKELSTEIN. But generally those meetings deal with priority setting or they deal with the Government making a specific proposal, and having comments offered on specific proposals.

What we are looking for and what we have never, at least in NHTSA, been able to get in the past is other groups volunteering to us hard technical data, other groups volunteering to us their data files without resorting to subpena, without resorting to special orders, and doing it in a forum where we can discuss what their data mean and understand what their data mean.

Mr. GLICKMAN. I am going to move on. We have been here quite a while. I want to ask a few more questions.

One is the "Car Book." I understood that nearly 2 million Americans have asked for the "Car Book," yet the publication has been discontinued. Why?

Mr. PECK. Well, first, I am publisher of three quarters of those. It was this administration that allowed the second printing of the book to take place.

Second, there is no reason to republish the "Car Book" because we still have a couple hundred thousand left.

Third, it has not been discontinued except in the very narrow sense that a physical document called the "Car Book" with the same design of that document is not published in that form. But none of the information that is in the "Car Book" has either been discontinued or is not being offered by the agency.

On that particular question, here was my thinking on allowing it to be published. First——

Mr. GLICKMAN. As I understand it, this information is not available in the same convenient form it used to be available. It is available only as decentralized information. There is no—the same kind of formalized method of composite information is no longer available. You have to get it 150 different ways.

Mr. PECK. Well, it was the conclusion of the study of whom the contract technical manager was the author of "Car Book 2," or "Son of Car Book," privately published, that in terms of what people, consumers, want, the "Car Book" was not responsive. It is attractive, it is nice to wave around. It makes an attractive talk show prop. But the fact is what people wanted was not being adequately served by it.

When we authorized the publication of the million and a half represented by the second phase of the contract, it was because there was a demonstrated demand, a demonstrated need, but with full recognition of the fact that "Car Book" both substantively and procedurally had a lot of problems.

Now what we have done is look at the results of the national study conducted for the Agency and which concluded that certain priorities of fact are important for consumers. And we have created for the very first time a mechanism for distributing the kind of information in a kind of format people tell us they need.

If in fact we had continued to publish the "Car Book," for example, the $1.3 million that the "Car Book" cost would have had to have been found somewhere. I will tell you where it was found by my predecessor. It was found in Mr. Finkelstein's rulemaking program. I do not think that is a valid use of rulemaking funding. Our concern for the fullest dissemination is extremely strong.

Mr. GLICKMAN. Your concern may be strong. So is the statute. Reading from title II, the "Automobile Consumer Information Study" is the name of the title. The Secretary shall compile the information described in subsection (c) and furnish it to the public in a simple and readily understandable form in order to facilitate comparison among the various makes and models of passenger motor vehicles with respect to the characteristics enumerated in subsection (a), which basically is crashworthiness.

Mr. PECK. I am familiar with this.

Mr. GLICKMAN. What are you doing to comply with that statute?

Mr. PECK. We are producing, compiling, and distributing to the public exactly the same information that was in the "Car Book." We are doing it through the hotline, through individual program——

Mr. GLICKMAN. You mean the 800 number? Is that what you are talking about?

Mr. PECK. Yes.

Mr. GLICKMAN. That is not in the same form as the "Car Book"?

Mr. PECK. No, no. I am sorry. I didn't say in the same form. If I did I didn't mean in the same physical format. By no stretch of my reading of that statute does it say we have to have a "Car Book."

Mr. GLICKMAN. No, it doesn't, but it implies you ought to have something on paper that gives people reasonable comparisons.

Mr. PECK. And that is exactly what we have.

Mr. GLICKMAN. We don't care if you have a "Car Book." We just think that your testimony is rather vague. We don't know what in fact you intended to do to implement this statute.

Mr. PECK. Let me ask the man in charge of implementing that to testify and give you in detail what the consumer program is.

For the first time the agency about 2 weeks ago ran a consumer forum. It lasted all day and the precise purpose was to identify whether there were ways to enhance it. I would like to introduce Mr. Burdett.

Mr. GLICKMAN. State your name for the record and briefly describe how you intend to implement this section of the statute.

Mr. BURDETTE. Yes, sir, my name is Dick Burdette, I am Director of Public Consumer Affairs for the agency.

We disseminate information. The hot line has five basic functions that occur. One is the reporting of defect information.

Mr. GLICKMAN. By the way, is the hot line new with you, Mr. Peck?

Mr. PECK. No, sir, but this is the first use of it for this purpose because what we discovered when we looked at it was we had in our lap already there, already paid for, an absolutely unique resource for the dissemination of consumer information. And that was a software program——

Mr. GLICKMAN. OK, you are saying you are using it to report defects?

Mr. PECK. It had always been used only for that purpose.

Mr. GLICKMAN. You are using it now as a way to get consumer information back too?

Mr. PECK. No; to get consumer information out.

Mr. GLICKMAN. That is what I mean, out to the public.

OK, tell me what you are doing then.

Mr. BURDETTE. Of these five basic functions, one is providing to the consumers consumer-related information that is contained or that was previously contained in the "Car Book." The difference is that the information in the "Car Book," which incidentally was published in December, following—December of the year, the data it provided was December of the following year—what we are doing with the hot line is providing that information as it becomes available, so that we provide information on crash tests, on, when we have it, maintenance costs. Other types of consumer information are provided as that information becomes available.

Mr. GLICKMAN. It was charged the other day that you delay that information until after the model year has passed.

Mr. PECK. That is not only categorically untrue, but it was indeed the practice of the prior administration. I was about to ask if I could speak to that point because it is I think one of the single most unfair facts alleged in testimony before the Agency last Tuesday.

The practice of the Agency I discovered to my horror was not to release car crash data until there was a sufficient amount of it to make a lively headline and a news conference. As far as I was concerned, if we had crash testimony data, it should get out there as fast as possible. That is what we do. That was characterized as haphazard in testimony last Tuesday.

Mr. GLICKMAN. What you are telling me is you make no effort to defer crash information until after a certain period of time to get the model year cars out and in circulation?

Mr. PECK. None whatsoever.

As a matter of fact, we release that information before it is even being approved by the contract technical manager and it has resulted in some embarrassment when we discovered flaws and had to after the fact go back and correct it.

Mr. GLICKMAN. Mr. Burdette, go ahead now.

What else are you doing to comply with the statute?

Mr. BURDETTE. The other five methods, five functions that the hot line performs include the transfer of, when we get an internal referral which involves a question that is beyond the technical capability of the operator or a question that is not easily supplied or not easily answered by the consumer information, we will refer internal calls to engineers, lawyers——

Mr. GLICKMAN. But you don't publish any document then that goes out to the public?

Mr. PECK. Oh, yes, we do.

Mr. BURDETTE. Yes, sir.

Mr. GLICKMAN. What is it called?

Mr. BURDETTE. We have a series of approximately 20 documents. One of them is called—which refers to the crash testimony data, is a sheet we update periodically as crash testimony data become available.

Mr. GLICKMAN. On all cars?

Mr. BURDETTE. On all cars that we test.

Mr. PECK. Cumulatively on all cars that have been tested.

Mr. GLICKMAN. Have you ever thought about continuing the Car Book and charging for it?

Mr. PECK. Yes; it would be a disaster for this reason: The Car Book had about, I should know this, 81 pages, 82 pages. The majority of the material in the "Car Book" is of a general informational purpose.

I see you have one, sir. If you would look to the last page, the last several pages, checklists, consumer information, general material, what is a warranty, this is like that. I don't see any way to justify the Federal Government publishing that again when we still have a couple of hundred thousand copies of it around to give out. As far as the general information is concerned, therefore, there is no need to republish it because it is already there published and given out.

As far as the specific data is concerned, at the time that "Car Book" was published, it was already out of date. It requires so long a lead time to publish a document like that that it, in my judgment, was pointless except to create in one document, in one volume, a single base line from which to proceed with information dissemination.

Mr. GLICKMAN. All right, I am not going to get further into this. I am concerned that you are not complying with the statute. If possible, I would like to, if you could provide for the committee in writing exactly how you are complying with the statute, it might be useful to us.

Mr. BURDETTE. Surely.

[The information follows:]

QUESTION: What is NHTSA doing to comply with Title II of the 1972 Motor Vehicle Information and Cost Savings Act, which requires the Secretary to compile and furnish comparative information on passenger cars in three areas: crashworthiness, damage susceptibility, and ease of diagnosis and repair of mechanical and electrical systems?

ANSWER: NHTSA is complying with these Title II requirements by developing or generating such information and by compiling and furnishing it to the public through agency publications, agency press releases, and the agency's expanded Consumer Auto Safety Hotline.

Crashworthiness information is generated by NHTSA through the agency's experimental New Car Assessment Program and through various compliance test programs. The details of this program are provided in the attached "Fact Sheet" of the program (see Attachment #1). Additional details are contained in two attached press releases reporting crash test results and announcing improvements to the program which include repeatibility testing addressed to the validity and accuracy of test results (see Attachments #2 and #3).

From the outset of the New Car Assessment Program, the challenge to the agency has been how to obtain valid results and how to make them available in a meaningful format which is informative but does not, through oversimplification, tend to mislead. We believe the new format for the presentation of such results, which includes both numerical information and the raw data itself (see Attachment #2 and #3), will allow readers of all levels of sophistication and technical competence to review and understand the results to the limits of their ability and needs.

NHTSA's attempt to generate or develop damage susceptibility information is continuing, although this effort has proved to be particularly difficult. In addition, our research in this area indicates that accident repair costs are considered by consumers to be of little importance in the decision to purchase a passenger car since for most people car insurance covers damage expenses above the deductible amount.

Our past work on damageability ratings suggests that the development of such a rating scheme, and of specific ratings for new passenger cars, would be very costly since it would involve the acquisition and destruction of new vehicles under carefully controlled and scientifically valid conditions. We are continuing, however, to review existing data sources to determine whether different approaches or newly developed or expanded data bases on crash testing or road performance may permit the development of such ratings within realistic economic constraints.

Proposals to rate passenger cars on "ease of diagnosis" and "ease of repair" of mechanical and electrical systems are currently being analyzed. We hope that such ratings can be developed; however, our attempts so far have had limited success since we could not determine the true frequency of failure rates for the systems selected.

NHTSA disseminates the comparative passenger car information it develops or generates through agency publications, press releases, and the expanded Consumer Auto Safety Hotline. Currently, there are 24 NHTSA publications offered by the Hotline operators. The list of these publications is attached (see Attachment #4). Examples of NHTSA press releases pertaining to crash test results were noted earlier (see Attachments #1, #2, & #3).

On February 10, 1982, NHTSA announced a program to broaden the use of the toll-free Consumer Auto Safety Hotline to accept calls from the public who seek general auto safety information (see Attachment #5 for the press release announcing the expanded Hotline program). The Hotline is intended to improve the quality, quantity, and timeliness of information that previously had been provided in "The Car Book" and other NHTSA publications.

This expanded Hotline service will improve the quality of information provided to the public by "The Car Book" in two main ways. First, in-house reproduction of safety-related information allows us to constantly update our information. Publications such as "The Car Book" have long lead-time printing requirements and cannot provide up-to-the-minute information. Second, the expanded Hotline allows consumers in a single telephone call to obtain information on a vehicle-specific basis of auto recalls, fuel economy ratings, crash test results, bibliographies identifying magazine articles on specific makes and models, vehicle maintenance figures, costs of operating vehicles and other publications available from NHTSA. The Hotline format makes all of this information, and updates, available to consumers across the nation for a single toll-free telephone call.

Improvements in the quantity of information include publication of all crash test results, including raw data and the actual model year of the vehicle tested.

Improvements in the quality also include abandonment of the "pass-fail" format, which tended to mask the differences in performance of cars, most seriously at the extremes of the two categories involved. Instead, a graphic display format showing degrees of better or worse performance has been adopted, and raw data detailing information as to the criteria and meaning of the tests and results are included for the more sophisticated reader.

fact sheet

United States
Department of Transportation

Office of Public Affairs

Washington, D.C. 20590

The information contained in this fact sheet has been checked for accuracy and corrected as of the date shown below. The Office of Public Affairs should be contacted if further information is required.

Subject NEW CAR CRASH PROTECTION ASSESSMENT PROGRAM 1981 CARS

Date: February 10, 1982

Phone: (202) 426-9550

Legislative Authority

Title II of the 1972 Motor Vehicle Information and Cost Savings Act requires the U.S. Department of Transportation to publish comparative information on new cars by make and model in three areas: crashworthiness (how well cars protect their occupants in crashes), damageability and ease of diagnosing and repairing damage.

Goals

The intent of the legislation is to increase consumer awareness of safety and performance differences among various automobile makes and models. It is anticipated that such ratings will foster competition among manufacturers to produce cars that are safer, more resistant to damage and less costly to service and repair. Ultimately, ratings may reduce the need for some safety regulations.

These results are part of a continuing testing program to provide new car buyers with information on how the various makes and models compare under standardized, representative crash conditions. The program initially emphasized the development of historical ratings from such sources as police reports and insurance claim files. This approach, while useful to used car purchasers, could not give consumers information about new cars until the vehicles had been in production for a few years.

The New Car Assessment Program

The experimental New Car Assessment Program began in May 1979. NHTSA is crash testing cars frontally at 35 miles per hour into rigid barriers to determine whether new cars substantially surpass existing federal motor vehicle safety standards. They also are struck in the rear by a 4,000 pound object moving at 35 mph to determine fuel system integrity.

Instrumented anthropomorphic dummies (displaying human-like characteristics and responses) are placed in the driver and front passenger seats. They are fully restrained, wearing both lap and shoulder belts. Dummy placement and belt adjustments are made to resemble properly seated and restrained human passengers.

During the 35 mph crash, readings are taken from each dummy and a computer records the severity of the forces on the head, chest, and thigh bones. From these data, automotive scientists and engineers can measure the probable extent of "injury" to each dummy. NHTSA interprets the test results as follows: human front seat occupants of a car that performs substantially less than the occupant protection criteria in a 35 mph frontal crash are more likely to suffer serious or fatal injuries. Front seat occupants of a car that meets the criteria are much less likely to suffer death or serious injury in a 35 mph frontal crash.

The action of a car hitting a fixed, rigid barrier is equal to a head-on collision between two identical cars, each travelling at the same speed. (A 35 mph car-to-barrier test is the same as two identical cars colliding at 35 mph or at a 70 mph closing speed.) These results cannot, however, be used for directly comparing the crash performance of small cars with large cars.

Changes in the Program

It is important to emphasize that the new car assessment program is experimental and only one model of each car was crashed in a specific test. Subsequent crash test results for any vehicle may vary due to differences in the way the cars were manufactured, equipment and test conditions. In an effort to better assess the crash test results, NHTSA will soon conduct repeatability testing. Repeatability testing (a series of tests on identical models of a car) will produce additional data and help NHTSA engineers distinguish between variations in results due to the test procedures and variations in the cars that are being tested.

In previous tests, NHTSA presented the results as "pass" or "fail" depending on whether the occupant protection criteria were met. Effective with the test results announced Sept. 14, 1981, NHTSA no longer characterizes the results as "pass" or "fail" but lists the actual scores measured. This change will be more useful to consumers because it allows them to compare cars on a continuous scale of performance rather than grouping in just two categories. In addition, the tests measure the extent to which cars are capable of meeting the performance criteria of several current standards (windshield retention, zone intrusion and fuel tank leakage) at speeds above those called for in the standard. These standards require that the criteria be met in crashes at 30 mph into a rigid barrier. The crash test program, however, measures performance in 35 mph crashes, measuring whether cars exceed these standards.

Since the program identifies "overachievers," it is misleading and unfair to the consumer and the manufacturer to characterize a car that meets existing standards — but does not exceed them — as a "failure." By listing such a car as a "failure," consumers might infer that the vehicle in question failed to meet the minimum federal safety requirements, which is not the case. Performance is also measured against occupant injury criteria that cars equipped with automatic restraints must meet in 30 mph crashes.

Program Responsibilities

The program is being conducted jointly by the National Highway Traffic Safety Administration's Office of Automotive Ratings, Office of Passenger Vehicle Research and Office of Vehicle Safety Compliance. The cars are being tested by Calspan Corp. of Buffalo, N.Y., Dynamic Science of Phoenix, Ariz., Approved Engineering Test Laboratories of Fullerton, Calif., Minicars, Inc., of Goleta, Calif., and the Transportation Research Center of East Liberty, Ohio.

U.S. Department of
Transportation

News:

Office of Public Affairs
Washington, D.C. 20590

FOR IMMEDIATE RELEASE
Tuesday, January 4, 1983

NHTSA 1-83
Contact: Hal Paris
Tel.: (202) 426-9550

NHTSA RELEASES CRASH TEST RESULTS OF FOUR 1982 CARS

The National Highway Traffic Safety Administration today released results of four more crash tests involving two foreign and two domestic 1982 model year automobiles.

The tests are part of a new car assessment program conducted by NHTSA, which last Nov. 18 released results of earlier crash tests for 12 vehicles.

All the vehicles in NHTSA's test program were crashed at 35 miles per hour into a fixed barrier in frontal tests designed to measure levels of occupant protection, and in moving barrier rear tests designed to determine fuel system integrity.

The 35 mph test speed is 5 mph higher than the 30 mph impact required for compliance with the federal motor vehicle safety standards, but is the prescribed speed for all new car assessment program crash tests. Instrumented dummies were used in the tests and all wore manual belts.

The four models tested -- the Mazda 626, the Ford LTD, the Ford Granada L, and the Volkswagen Quantum -- were crashed to determine whether they met the Federal Motor Vehicle Safety Standard No. 208 injury criteria at 35 mph for the driver and front seat passenger.

In accordance with injury criteria established by Standard No. 208, the Head Injury Criteria (HIC) should not exceed a value of 1,000 in crashes at 30 mph. A chest deceleration of 60 G's or less and femur (thigh) load under 2,250 pounds are also required to meet the 30 mph criteria.

The head, chest and upper legs of the dummies were monitored during the tests. Other aspects of protection also were monitored, including whether the vehicles:

- Retain the windshields during the crash (Standard No. 212).
- Prevent intrusion of vehicle parts into the occupant compartment (Standard No. 219).
- Maintain the integrity of the entire fuel system to prevent leakage of fuel in a crash (Standard No. 301).

The new car assessment program began in May 1979. Its ultimate objective is the development of a system to measure safety and performance differences among various automobile makes and models. It is important to emphasize, however, that the new car assessment program is experimental and only one model of each car was crashed in a specific test. Subsequent crash test results for any vehicle may vary due to differences in the way cars are manufactured and equipped, or due to slight variations in test conditions. In an effort to better assess these and other crash test results, NHTSA has begun repeat testing of certain 1982 models.

Results will be announced later for tests involving the Chevrolet Impala, Lincoln Continental and Toyota Corona, all 4-door vehicles; the Chevrolet Chevette and Dodge Colt, 4-door hatchbacks; the 2-door Renault Fuego, the Chevrolet Cavalier, a 2-door hatchback, and the Chrysler LeBaron, a 2-door convertible.

The accompanying chart shows the test results.

# # # # # # # # # #

1982 NEW CAR ASSESSMENT PROGRAM CRASH TEST RESULTS

Vehicle	Test Speed/Weight	HIC D/P 1/	Chest Resultant D/P 1/	Femur Loads Driver L/R 2/	Femur Loads Pass L/R 2/	FMVSS 212	FMVSS 219	FMVSS 301
VW Scirocco 2-Dr.	35.1/2680	1482/683	54/37	330/275	200/175	yes	yes	yes
Dodge Omni 4-Dr.	35.2/2670	639/1703	58/43	460/825	600/1450	yes	yes	yes
SAAB 900 4-Dr.	35.3/3220	734/1166	39/35	990/725	800/1275	yes	yes	yes
Volvo DL 2-Dr.	34.9/3354	550/381	45/35	146/1123	877/201	N/A 3/	N/A 3/	N/A 3/
Datsun Stanza 4-Dr. HB	34.6/2686	974/879	55/39	377/449	704/1289	yes	yes	yes
Dodge 400 2-Dr.	35.0/3044	520/756	44/41	1080/880	1011/914	yes	yes	yes
Toyota Celica 2-Dr.	34.7/3060	702/530	36/45	456/448	360/359	yes	yes	yes
Chevrolet Camaro 2-Dr.	35.4/3428	563/577	39/32	901/1004	258/358	yes	yes	yes
Ford Escort 4-Dr. HB	34.5/2584	950/1070	47/39	1150/1050	1518/1530	yes	yes	yes
Honda Accord 4-Dr.	34.8/2635	500/403	43/29	1078/1308	1145/754	yes	no 4/	yes
Chevrolet Celebrity 4-Dr.	35.0/3273	478/395	33/21	774/1052	918/595	yes	yes	yes
Datsun Sentra 4-Dr.	35.2/2455	549/865	43/46	499/103	1111/251	no 4/	yes	no 4/
* Mazda 626 4-Dr.	35.3/2900	969/1693	47/50	575/1215	550/250	yes	yes	yes
* Ford LTD 4-Dr.	35.5/4130	960/808	50/43	360/640	350/180	yes	yes	yes
* Ford Granada L 4-Dr.	34.6/3430	860/1050	5//52	980/800	460/310	yes	yes	yes
* Volkswagen Quantum 4-Dr.	34.6/2954	1353/1194	53/41	180/436	561/413	yes	yes	yes

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* New test results.
1/ D/P - Driver/Passenger
2/ L/R - Left/Right
3/ Not tested in these standards.
4/ Retest at 30 mph - passed.
5/ Instrumentation problem; data not available.

U.S. Department of Transportation

news:

Office of Public Affairs
Washington, D.C. 20590

FOR IMMEDIATE RELEASE
Monday, September 14, 1981

NHTSA 34-81 (PARIS)
Tel. No. 202-426-9550

DOT RELEASES NEW CAR TEST RESULTS; IMPROVES PROGRAM

The U.S. Department of Transportation today released the results from its latest new car crash tests and at the same time disclosed that it will improve its program to include repeatability testing addressed to the validity and accuracy of the results.

The tests released today covered 10 foreign and five domestic vehicles, all 1981 models. Most were subcompacts and compacts. The findings were released by Raymond A. Peck Jr., administrator of the department's National Highway Traffic Safety Administration.

Cars were crashed at 35 miles per hour into a fixed barrier in frontal and oblique (30 degree angular impact) tests designed to determine levels of occupant protection, and in moving barrier rear tests to determine fuel system integrity.

"Safety is our top priority at NHTSA and this program can be a valuable tool for developing safety-related information for both the public and industry," Peck said.

"It is important to note that in this test program each car is crashed only once in a specific test," Peck added. "Repeatability testing (a series of tests on identical models of a car) will give us additional data and help us distinguish between variations in results due to the test procedures and variations in the cars that are being tested."

Peck said the tests could produce such varying results due to differences in the way cars are manufactured, how the models tested are equipped and the test conditions themselves.

He noted that in some of the tests, the procedures themselves may have produced invalid results. Pieces of adhesive tape fastened to test devices on the shoulder belts of test dummies apparently failed to release on impact, as intended. For example, in one test, the dummy involved struck its head on the dash board of a Ford EXP.

"Because of this problem of test practice uncovered in the review of the films, I see no alternative but to invalidate the results of that aspect of the test," Peck said.

The agency's preliminary review of test films indicates that this question may exist with respect to other tests as well. NHTSA has tentatively invalidated results for some aspects of the Audi 5000 test, and the agency's experts currently are reviewing all test films of the current series to determine whether other results may be affected.

Peck noted that the results had been released prior to completion of the full test series and full verification by the agency, as a result of formal requests filed under the Freedom of Information Act.

Peck also announced that for the first time, NHTSA will open a series of tests in the program to the public at a date to be determined. "We think it is important that the public understand the complexity and sophistication of the tests themselves," Peck said.

The 35 mph test speed is 5 mph higher but 36 percent more severe than the 30 mph impact required for compliance with the federal motor vehicle safety standards. Instrumented dummies are used, and all dummies in the tests wore manual or automatic belts. The compliance portion of the tests also measure other aspects of the protection a car affords, including whether the vehicles:

- o Retain the windshields during a crash.
- o Prevent intrusion of vehicle parts into the occupant compartment.
- o Maintain the integrity of the entire fuel system to prevent rupture of the fuel tank or leakage of fuel in a crash.

Of all the 1981 models tested, only three cars -- the two-door Chrysler Imperial, the two-door AMC Spirit and the two-door Honda Civic -- met the 30 mph criteria at 35 mph for both the driver and the front seat passenger in a frontal crash. The two-door Plymouth Reliant, the two-door hatchback Ford Escort and the four-door Volkswagen Jetta, met the 35 mph criteria in crashes in the oblique mode, which is not as severe as a frontal crash.

During the 35 mph crash, readings are taken from each dummy and a computer records the severity of impact to the head, chest and thigh bones. Test results are measured in terms of changes in accleration and compression. A Head Injury Criterion (HIC) number of 1,000 or less, a chest deceleration of 60 G's or less and a femur load under 2,250 pounds are required to meet the NHTSA 30 mph occupant crash protection criteria.

NHTSA engineers believe that if a car meets the criteria, death and serious injury probably would have been avoided.

The experimental new car assessment program began in May 1979. Its ultimate objective is the development of a system to measure safety and performance differences among various automobile makes and models.

# # #

RESULTS OF 1981 NEW CAR ASSESSMENT PROGRAM

1981 Make/Model	Test	Test Speed (mph)	Test Weight (lbs.)	HIC No. d/p	Chest (g) Resultant d/p	Driver Femur L/R	Passenger Femur L/R	Meets Criteria Standards at 35 mph			
								212	219	301 Frontal	301 Rear
Honda Civic[1] (2 dr)	Front	35.1	2160	607 492	41 35	200 500	1100 540	No	Yes	Yes	Not Tested
Toyota Starlet (2 dr)	Front	35.1	2214	1836 1351	65 48	830	652 124	Yes	Yes	Yes	Yes
Honda Civic (4 dr)	Front	35.0	2456	985 1391	53 43	462 1386	1194 797	Yes	Yes	Yes	Yes
Ford EXP [2] (2 dr htchbk)	Front	35.0	2542	745 (2668)[2]	49 53	857 19	320 189	Yes	Yes	Yes	Not Tested
VW Jetta [1] (4 dr Pass Res)	Front	34.9	2650	1210 1272	68 52	1276 1191	1559 1286	No	Yes	Yes	Yes
Renault 18i[1] (4 dr)	Front	35.2	2750	1150 1659	47 36	360 280	800 700	No	Yes	Yes	Yes
AMC Spirit[1] (2 dr)	Front	35.0	3190	702 652	43 33	Not Avail. 1300	280 560	Yes	Yes	Yes	No
Audi 5000 [2] (4 dr)	Front	34.7	3361	(1288)[2] (1503)[2]	43 52	480 712	628 394	Yes	Yes	Yes	Not Tested
Toyota Cressida (4 dr Pass Res)	Front	35.1	3417	1980 771	55 50	1710 1982	1644 1807	Yes	Yes	Yes	Yes
Chrysler Imperial (2 dr)	Front	35.3	4562	976 590	47 32	742 371	750 564	Yes	Yes	Yes	Yes
Ford Escort (2 dr htchbk)	RH Frontal Oblique	35.2	2368	243 603	32 38	672 934	469 763	Not Appl.		Yes	Yes
Mazda GLC (4 dr)	LH Frontal Oblique	35.3	2427	555 516	48 35	313 507	284 146	Not Appl.		Yes	Yes
VW Jetta (4 dr Pass Res)	LH Frontal Oblique	34.8	2521	161 517	35 31	758 1295	1547 1163	Not Appl.		Yes	Yes
Plymouth Reliant (2 dr)	RH Frontal Oblique	34.9	2798	355 566	31 50	1655 883	886 1429	Not Appl.		Yes	Yes
Renault 18i (4 dr)	RH Frontal Oblique	34.5	2808	731 1001	38 39	269 458	430 543	Not Appl.		Yes	Yes

1/ Final test report not yet received. **All results subject to NHTSA verification.**

2/ Test result considered invalid at this time. (See attached press release)

FMVSS 208 Injury Criteria limits: Head Injury Coefficient (HIC) = 1,000; Chest = 60 g's; Femurs (left & right) = 2,250 lbs.

* = marginally exceeded FMVSS 208 criteria at 35 mph.

FMVSS 212 requires that each windshield mounting be anchored in place and retain a specialized percentage of its periphery in a 30 mph crash.

FMVSS 219 regulates the intrusion of vehicle parts from outside the occupant compartment into a defined zone in front of the windshield in a 30 mph crash.

FMVSS 301 limits the amount of fuel that can be leaked from any part of the fuel system during the crash test and following the test in a static rollover test.

LIST OF PUBLICATIONS OFFERED BY NHTSA HOTLINE

TITLE & PUBLISHER	PUBLICATION NO. OR FSN
1. CRASH TEST RESULTS FACT SHEET (NHTSA)	
2. LATEST RESULTS OF NHTSA CRASH TESTS - (NHTSA)	
3. YOUNG PEOPLE AND ALCOHOL (NHTSA	
4. THREE WAYS TO KEEP A FRIEND (NHTSA)	DOT HS 806-045
5. AN ACTIVIST GUIDE FOR CURBING THE DRUNK DRIVER - (NHTSA)	DOT HS 802-110
6. HOW TO TALK TO YOUR TEENAGER ABOUT DRINKING AND DRIVING - (NHTSA)	
7. THE HUMAN COLLISION - (NHTSA)	CTS 2-76
8. HOW MANY OF THESE FAIRY TALES HAVE YOU TOLD? - (NHTSA)	DOT HS 802-152
9. MYTHS AND FACTS ABOUT CHILD CAR SAFETY - (NHTSA)	DOT HS 806-046 (c)
10. CHILD RESTRAINT SYSTEMS YOUR CAR - (NHTSA)	DOT HS 805-174
11. 1982 GAS MILEAGE GUIDE - (DOE)	
12. 1982 GAS MILEAGE GUIDE FOR CALIFORNIA - (DOE)	DOE/CE 0020
13. MOTOR VEHICLE DEFECTS AND RECALL CAMPAIGNS - (NHTSA)	DOT HS 805-709
14. 1980 SAFETY RELATED DEFECTS AND RECALL CAMPAIGNS - (NHTSA)	DOT HS 805-750
15. AUTO SAFETY HOTLINE - (NHTSA)	DOT HS 803-231
16. UNIFORM TIRE QUALITY GRADING (NHTSA)	DOT HS 804-086
17. TIRE GRADING SYSTEM INFORMATION - (NHTSA)	DOT HS 806-091
18. MOTORCYCLE SAFETY - (NHTSA)	
19. MOTORHOME AND PICKUP CAMPER SAFETY - (NHTSA)	DOT HS 803-025
20. TRAVEL AND CAMPER TRAILER SAFETY - (NHTSA)	DOT HS 802-586
21. ROAD SIGNS AND SYMBOLS - (FHWA)	050-000-00152-1
22. SAFE DRIVING IN WINTER - (NHTSA)	DOT HS 802-076
23. THE CAR BOOK - (NHTSA)	DOT HS 805-580
24. COST OF OWNING AND OPERATING AUTOS AND VANS - (FHWA)	HHP-41

U.S. Department of Transportation

News:

Office of Public Affairs
Washington, D.C. 20590

FOR RELEASE WEDNESDAY
February 10, 1982

NHTSA — 5-82 (PINTO)
Tel. (202) 426-9550

DOT ANNOUNCES
EXPANDED CONSUMER
INFORMATION PROGRAM

The U.S. Department of Transportation announced today the start of an expanded program to provide automobile consumer and safety information to the American public.

A key part of the program involves a broader use of a toll-free nationwide telephone "hotline" service, currently operated by the department's National Highway Traffic Safety Administration. The "hotline" permits consumers throughout the country to call free for recall and safety-related information about automobiles. Beginning today hotline operators will accept calls from consumers seeking general auto safety information.

A single telephone call will make available to the public, free of charge, information on auto recalls, fuel economy ratings, crash test results, uniform tire quality grading ratings, bibliographies identifying magazine articles on specific makes and models of various cars, vehicle maintenance figures, The Car Book, the costs of operating various vehicles, the odometer tampering program, and a listing of various publications consumers can order from NHTSA.

The agency's toll-free hotline number is 800-424-9393 (426-0123 in the Washington, D.C. metropolitan area.)

The information program announced by NHTSA Administrator Raymond A. Peck is an outgrowth of the Agency's belief that an informed marketplace is the key to improving automobile safety and performance. In providing a full range of information, Peck said the program "will enable American consumers to more fully compare the relative safety and performance of various domestic and foreign automobiles, and to obtain other important consumer information, such as mileage and tire ratings on a constantly updated basis."

Peck made the announcement on the same day that his agency conducted a crash test demonstration at East Liberty, Ohio, which was open to the public and the news media for the first time. NHTSA's crash test program is designed to determine how well new cars protect their front seat occupants in crashes at 35 miles per hour.

Peck said the consumer program will draw on private sector information programs as well as using agency technical expertise and publications. The adoption of private sector data is intended to expand the base of information available to consumers while at the same time avoiding unnecessary government expense.

"In many cases information provided by the federal government, at taxpayer expense, is duplicated by publications such as 'Consumer Reports' and the specialized automotive press. In addition, the private sector information is often more timely than that provided by the government," Peck said.

The agency's new efforts will include bibliographies of such information, to assist consumers in locating more information than is currently available from any single federal government source.

"The department's goal from the beginning has been to make consumer information available in a timely fashion so it can be used to make informed decisions in the marketplace. It does consumers little good to publish abbreviated information a year or more after the data was collected," Peck said.

The expanded crash test program is a major component of the new consumer information effort. Peck said the agency will conduct a program of repeatability testing to verify the results of the crash tests.

The program will consist of testing 12 identical cars, four each at three different crash test facilities. "For the first time, the federal government will be able to assess the accuracy of the tests and the far-reaching conclusions relating to automobile safety, something we've never been able to do before," he said.

"As a result we've never been able to report anything more than what the results were for that car, in that crash, that day. We could not say a second car of the same make and model would crash with the same results. Repeatability testing on identical models of cars will produce additional and more reliable data to help distinguish between variations in results due to test procedures and variations in the cars themselves."

Peck's decision relating to the crash test program and dissemination of the full range of data from the program is designed to increase the amount of relevant information previously made available to the media and public. In addition, he plans a more timely release of such data in a format more comprehensive yet easier for consumers to understand.

In deciding to open the tests to viewing by the public and news media for the first time, Peck said it was his intention "to provide a fuller understanding about the complexities, benefits and limitations of the testing process, and an appreciation of our commitment to safety and enhanced public access to safety information.

"Our goal is to make more consumer information available on popular cars sold in this country. Through this program, we are opening up new and expanded fields of research as well as innovative information dissemination programs in an overall effort to fulfill the important safety mission of NHTSA," Peck said.

Mr. **Peck**. I believe we had a long submission to the Appropriations Committee. I would be glad to update it.

Mr. **Glickman**. The last question, Mr. Peck, then I will close the hearing. I want to thank you and all your people. It looks like you have the entire NHTSA over here today.

Mr. **Peck**. I thought we were going to talk about small cars on Tuesday. Now I realize there is—I think only Carl Nash is not here, but I wanted to make sure we had an answer to just about everything you—

Mr. **Glickman**. I appreciate that.

I understand that you traveled to Japan during the first week of November to attend a conference on experimental safety vehicles.

Mr. **Peck**. That is correct.

Mr. **Glickman**. In Kyoto.

And then, in addition to that, I understand that you are going back to Japan again very soon, this Sunday. Dealing with the fact we have significant budget deficits, why is it necessary to go to Japan twice within a 6-week period?

Mr. **Peck**. The Government of Japan had requested prior to the conference that, during the week of the conference, representatives of NHTSA, and they would accept no one at a lower level than I, meet with the Ministry of Transport to discuss the question of harmonization of Federal safety standards.

We planned to do that and the original travel orders were cut with that in mind; 3 days before the start of the conference, I think in large part because of the change in government in Japan, it became apparent the Government of Japan requested that we not hold those sessions. The Government of Japan has reinstituted the request, and requested that those discussions be held on the 8th, 9th, and, if necessary, the 10th.

I would prefer strongly not to go. The problem is, as far as the Ministry of Transport of Japan is concerned, that these are technical issues, and only technical representation by the United States will suffice.

Mr. **Glickman**. Didn't you say the important meeting you were going to the first time was canceled 3 days before you left?

Mr. **Peck**. That is correct.

Mr. **Glickman**. Why did you go the first time if that were the case?

Mr. **Peck**. For the ESV conference. It was scheduled in conjunction with the ESV conference so that two trips would not be necessary. It was at the request of the Government of Japan that it didn't take place then.

As to whether anyone from my agency should go at all to this kind of a meeting, we are going at the express request of the Office of Special Trade Representative.

Mr. **Glickman**. I tell you, I only raise this because, with all the talk about Government spending, I am just trying to figure out, why did you go to the ESV conference in the first place?

Mr. **Peck**. Because I consider it a high priority of the agency. There has always been representation by the Agency. It has gone on every 2 years. This was, I believe, the ninth biannual meeting, and it is the only opportunity for the experts throughout the world dealing with quantum leaps forward in safety to actually get together and exchange technical information.

Mr. GLICKMAN. Do you take large numbers of staff with you when you go to these two meetings?

Mr. PECK. We have, until this year. The last session in Wolfsburg was 21. What we took this time was, I believe, 6, 7; 6 or 7.

Mr. GLICKMAN. At the first meeting, did you fail to make your closing remarks—I am told—much to the offense of the Japanese?

Mr. PECK. I am particularly glad you mentioned that because I was looking for an excuse to raise it.

On the last day of the conference I went out to look at an air bag demonstration. I arrived back at the conference 20 minutes ahead of the scheduled time for my concluding remarks to discover that the conference had ended 45 minutes earlier. And Mr. Finkelstein had been required to present my prepared concluding remarks. He had done so.

I made sure the Government of Japan knew what the circumstances were, and personally visited each of the businesses to make sure that people understood that I was there on time to deliver my remarks.

Mr. GLICKMAN. OK.

Mr. PECK. If it had not been for the air bag, I would have been there.

Mr. GLICKMAN. You won't hold that against the air bag, will you?

Mr. PECK. Oh, I certainly will not. No, I like them.

Mr. GLICKMAN. We thank you for appearing today. We have requested some additional information during the day which staff will follow up with you to insure that we obtain.

I want to make it clear that the purpose of these hearings—while we have explored some collateral matters—is to deal with the issue of car safety, and particularly with the issue of small car safety.

And these hearings were precipitated by a GAO report which indicated that you, your Agency, NHTSA, did not have an adequate data base to determine key factors on a whole range of questions which might lead to more research which might in turn lead to more effective regulation, or some other kind of safety standards in building cars.

I would again point out that we seem to get a lot more things done in this country on air safety than we do on auto safety. I am kind of glad, as I fly home every other weekend, that we do that. The point is that we have probably, well, we have at least 500 times as many people killed each year in cars as we do in airplanes.

Mr. PECK. We have as many people killed every day on the highway as were killed in that one crash in January here. Unnecessarily killed.

Mr. GLICKMAN. While the committee is not necessarily satisfied with the substance of all your answers, we do appreciate that you came down here and testified today. You will get the additional information we requested?

Mr. PECK. We will indeed.

If there are further questions or any other way in which we can be of assistance, we will be glad to supply it for the record or in person.

Mr. **Glickman**. Thank you. The hearing is adjourned.

[Whereupon, at 4 p.m., the subcommittee adjourned.]

APPENDIX

VOLKSWAGEN
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16 December, 1982

DEC 17 1982

Honorable Albert Gore, Jr.
Chairman
Subcommittee on Investigations and Oversight
and
Honorable Dan R. Glickman
Chairman
Subcommittee on Transportation, Aviation
and Materials
Committee on Science and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Gore and Glickman:

Volkswagen of America, Inc. wishes to submit the attached comments on the testimony presented at the Joint House Subcommittee Hearing on small car safety, November 30, 1982.

Considering the testimony and data presented at the Hearing, Volkswagen continues to believe that small cars are not a safety hazard.

Sincerely,

VOLKSWAGEN OF AMERICA, INC.

Charles A.
for Dietmar K. Haenchen
Executive Engineer
Vehicle Regulations

Porsche Audi Volkswagen

Comments
by
Volkswagen of America, Inc.

Covering Testimony given at the November 30, 1982
Joint House Subcommittee Hearing of the
Subcommittee on Transportation, Aviation and
Materials and the Subcommittee on Investigations and Oversight,
Committee on Science and Technology

Since they first appeared on American roads in the late 1940's, the introduction of small cars into a predominantly large-car environment has been a topic of conversation and conjecture by the technical community. These discussions were prompted by an indisputable law of physics, which states that if a heavier object collides with a lighter one, the latter will undergo a greater change in velocity - and perhaps even a reversal in direction. This would seem to predict that in a crash between a large and a small car, the small car would experience a more severe crash. However, this law of physics ignores the car's ability to absorb energy, the hostility of the interior and the effectiveness of the restraint system (if used). Because of this complexity, it is not a matter of a simple mathematical calculation to predict the relative safety of a small car. Accordingly, it is more important to know what happens to the occupants than it is to know what happens to the vehicle. Two tanks could collide without damage, but the jolt to the occupants could be fatal. Therefore, some method is necessary to more objectively evaluate how well a vehicle performs.

Crash testing has long been used as a basis for crashworthiness evaluations and for enforcement of safety standards. Although the test is valuable in a laboratory environment, and may be useful for predicting the relative merits of two cars, the restricted and unrealistic crash modes of the typical test, as well as technical problems of accuracy and repeatability, render the crash test an imperfect predictor of on-the-road performance. Rather, the proper and most direct method is to examine accident data directly, and much data of this nature was presented at the Hearing. However, it is Volkswagen's opinion that much of the work done thus far has been inadequate, or incomplete, and that the results are therefore inconclusive at best.

For example, the statement by the Public Citizen organization reiterated the hypothesis that the NHTSA published in August, 1980, that occupants of subcompact cars are eight times more likely to be killed than occupants of fullsize cars when the two cars collide. This hypothesis was based on 667 fatalities in small cars and 81 fatalities in large cars[1], if statistically valid, would label it a relatively low priority for action when considering the overall occupancy fatality count of 27,000. Furthermore, as pointed out by Dreyer in reference one, the trend towards smaller cars may even reduce the overall fatality rate.

The data presented by the Insurance Institute for Highway Safety (IIHS) has, for several reasons, little relevance to national statistics[2]. These data represented a convenience sample, and not a random sample, of member insurance companies which recorded claims from personal injury protection coverages of some nineteen selected states with no fault insurance[3]. Because of these rather narrow selection criteria, the results have little statistical relevance to the entire nation. Furthermore, some of the IIHS data were presented in terms of wheel base, and number of deaths per 10,000 registrations. The law of physics predicting small car risk is based on vehicle weight (as explained above) which is not well related to vehicle wheel base (see Table II). Furthermore, vehicle miles traveled is a more appropriate normalizing parameter for exposure than vehicle registrations. Vehicle registrations may not predict exposure accurately since small cars may be driven more or less than larger cars. (Some small cars, purchased for their economy of operation, serve as primary transportation (commuter cars) and accumulate significant average mileage. Others, purchased because of their low price, serve as "second cars", and correspondingly accumulate much less average mileage).

The most obvious flaw in the IIHS analysis concerns the fact that there may be other effects, like the age of the driver, that influence the data. For example, younger drivers, with poorer driving records, tend to buy small cars because of cost. Data from NHTSA's Fatal Accident Reporting System (FARS)[4] have consistently shown that young people are much more involved in fatal accidents. Another study[5] by Innes has shown that when age is accounted for, there is little difference in the IIHS claim frequency among all sizes of cars*.

Additionally, there are contradictions in the claims data. The ranking of vehicles has been highly publicized, using all claims as the ranking parameter. However, it may be more appropriate to consider claims above $1,000, since these are the accidents of higher priority for safety consideration (It is not difficult to produce a medical claim of $500 or less with relatively minor injury). Referring to the HLDI data for 1978-80 passenger cars[10] the ranking changes depending upon what level of severity is used. The ranking in Table I for claims over $1,000 would indicate that emphasis should be placed on fullsize cars as well as subcompact.

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*There was mention that driver age was considered in the IIHS data, however the Innes analysis, indicated that age may not have been properly accounted for.

TABLE I

IIHS DATA FOR 1978-80 PASSENGER CARS

BASED ON ALL CLAIMS		BASED ON CLAIMS >$1,000	
Car Size	Freq.	Car Size	Freq.
Small Subcompact	117	Fullsize	114
Subcompact	115	Subcompact	114
Small Compact	101	Small Subcompact	111
Compact	98	Compact	100
Fullsize	81	Small Compact	93
Intermediate	78	Intermediate	82

There is no doubt that the IIHS (HLDI) data is confusing and accordingly is of limited usefulness at this time. This is not because the data itself is necessarily flawed, but because the conclusions tend to be too much a product of the method of analysis, rather than a product of the data itself.

This situation has also surfaced in other studies, where conflicting conclusions are possible from different analysis of the same data. A study published by Evans[7] earlier this year examined the relationship between car weight and the likelihood of occupant fatality by studying the FARS data from 1978. The Evans study concluded that a person traveling in a 900 Kg. car is 2.0 times as likely to be killed as a corresponding person traveling in an 1800 Kg. car. This would indicate that an increase of small cars into traffic would increase the overall fatality rate. A subsequent study by Richter[8] using data derived in the Evans study, concluded that there may in fact be a decrease in the total number of fatalities as the number of small cars increase (because the small cars will be replacing heavier, more aggressive ones).

The Richter study also noted a strong over-involvement of intermediate size vehicles, something which had never been noted before. This latter conclusion may be attributable to a quirk in the data base, or may really have a basis in technological fact, but in any case, divergence of conclusions from the same data highlights the current problem in the analysis of small car behavior.

There are data that if properly analyzed, could add to information on the subject. However, in future studies some agreements on the definition of vehicle size and a proper normalizing parameter for exposure is needed, including a measure of exposure in terms of driver's age so that age can be factored out of the results. When a sufficient number of accident studies have been accumulated, the NASS file of the NHTSA will offer the best source of information to investigate the small car safety issue. The sample is random, and the accident information is collected by trained accident investigation teams, thus insuring consistency in definition and more reliable results.

Perhaps the most objective study of the small car potential hazard was made by the Government Accounting Office[6] (GAO). The GAO, in their study, indicated that available research has not resolved many of the issues involving small car safety. However, this study contained some conclusions based on data from state accident files which is somewhat questionable when extrapolating the results of just two states to the entire nation. Furthermore, the GAO analysis has the same question about exposure as the IIHS data since vehicle registrations were used instead of vehicle miles traveled.

If there is a higher risk to occupants of small cars, the data presented has not established that fact and certainly has not properly identified the magnitude of the problem so that priorities can be established. For example, more lives might be saved by removing aggressive sign posts or improving guard rails than by making modifications to vehicle structure.

The question as to the manufacturers' role in the small car issue was addressed by GM in their presentation. Like GM, VW spends millions of dollars in crash testing vehicles each year in order to develop acceptable vehicle structures. In addition to the structure, over 400,000 VW Rabbits have been manufactured voluntarily with automatic restraints. Furthermore, the automatic belt has been improved several times since its introduction in 1975, to make it more comfortable and convenient.

The Research and Development activity of VW continues to regard safety improvement as a high priority. This means that current designs are constantly being evaluated and future designs developed to insure adequate performance of the vehicle structure in the event of an accident.

In summary, the data presented during the November 30, 1982 Hearing, is either inconclusive or because of technical flaws, has not established that small cars are a safety hazard.

1. W. Dreyer, B. Richter and R. Zobel: "Handling, Braking, and Crash Compatibility Aspects of Small, Front-Wheel Drive Vehicles", SAE Technical Paper Series No. 810792, June 1981.

2. "The Usefulness of Insurance Data in Highway Safety Research", National Transportation Safety Board, Publication NTSB-SEE-81-5, August 81.

3. "Insurance Losses Personal Injury Protection Coverages Passenger Cars, Vans, Pick-Ups, and Utility Vehicles 1979-81 Models", HLDI Research Report HLDI 81-1, September 1981.

4. "Fatal Accident Reporting System 1980", National Highway Traffic Safety Administration, National Center for Statistics and Analysis.

5. J. Bruce Innes: "A New Perspectie on Small Car Safety", The Road Ahead, July/August 1982.

6. "Small Car Safety: An Issue that Needs Further Evaluation:, General Accounting Office Report CEP-82-29, April 1982.

7. L. Evans: "Car Mass and Likelihood of Occupant Fatality", SAE Technical Paper Series No. 820807, June, 1982.

8. B. Richter, R. Zobel: "Aspects of the Passive Safety of Motor Vehicles", presented at the 9th Experimental Safety Vehicle Conference, Kyoto, Japan, Nov., 1982.

9. J. Bruce Innes, Donna C. Startzel and Robert F. Fabiszak: "Automobile Safety Re-examined", Peterson, Howell & Heather white paper PHH-4, September, 1982.

10. "Summary of Injury Claims Experience for Passenger Cars", HLDI Research Report I80-1.

TABLE II (1982 MODELS)
VARIATION OF VEHICLE WEIGHT WITH IIHS/HLDI CAR SIZE